THE HISTORY OF CIVILIZATION

EDITED BY C. K. OGDEN

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The History of Civilization

Edited by C. K. OGDEN, M.A.

The Dawn of European Civilization

The History of Civilization

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The Dawn of European Civilization

By

V. GORDON CHILDE

B.Litt. (Oxon.)

NEW YORK

ALFRED A. KNOPF

1925

PRINTED IN GREAT BRITAIN BY HEADLEY BROTHERS,
18, DEVONSHIRE STREET, E.C.2 ; AND ASHFORD, KENT.

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PREFACE

The material basis and spiritual context of modern life are the cumulative result of the achievements and discoveries of the past. Europeans share with the Chinese and even with the aborigines of Australia a part of this cultural heritage. With the genesis of that common substratum however we are not here immediately concerned ; it has been described by M. de Morgan in an earlier volume in this series. My theme is the foundation of European Civilization as a peculiar and individual manifestation of the human spirit.

But on this topic sharply opposed views are current. One school maintains that Western Civilisation only began in historic times after 1000 B.C. in a little corner of the Mediterranean and that its true prehistory is to be found not in Europe but in the Ancient East. On the other hand, some of my colleagues would discover the origin of all the higher elements in human culture in Europe itself. I can subscribe to neither of these extreme views ; the truth seems to me to lie between them. In such a field it would of course be presumptuous to pretend to have attained a final synthesis. I can but present in all due humility the results of an earnest attempt to survey all the facts as a whole.

The Occident was, I would submit, indebted to the Orient for the rudiments of the arts and crafts that initiated man's emancipation from bondage to his environment and for the foundation of those spiritual ties that co-ordinate human endeavours. But the peoples of the West were not slavish imitators ; they adapted the gifts of the East and united the contributions made by Africa and Asia into a new and organic whole capable of developing on its own original lines. By the sixteenth century B.C. the new organism was already functioning and the point had arrived when the Westerners were ready to assume the rôle of masters. Among the Early Bronze Age peoples of the Ægean, the Danube valley, Scandinavia,

and Britain, we can recognize already the expression of those very qualities of energy, independence, and inventiveness which distinguish the western world from Egypt, India or China. But this does not justify the contention that the mutual rôles of the Ancient East and the Modern West, as they existed at the dawn of history, had been mysteriously reversed in a more remote antiquity.

My task is then to exhibit the creation out of the cultural capital common to many lands of the new force, the growth of which has ultimately transformed the face of the world. Since the germs of the new are evidently active in the Middle Bronze Age that period puts a natural term to the enquiry. But the existance of such divergent schools of thought necessitates a careful study of the evidence.

The Orientalists indeed treat the humble productions of early man in Europe with a certain contempt and have relied largely on *a priori* theories. But their opponents have lavished a loving care on the rude artefacts of our forerunners and by patient research have built up a powerful case in support of their thesis which cannot be demolished by a few generalizations. The material itself must be examined and the reader must judge which view allows of its coordination into the most logical and coherent whole. To that end the continent has been divided into several provinces, the spatial relations of which at different epochs are illustrated by four maps. Within these provinces the sequence of observed phenomena is well known ; disputes begin with the interrelation of the groups. Here I have tried to set forth the material objectively in its proper order and to expound the several views of competent authorities upon its interpretation.

But it must be remembered that our material is only the skeleton of an organism which once was clothed with flesh and which still is immanent in every moment of our lives. The continent which is so neatly mapped for us is itself a heritage from prehistoric times. Peasants with stone hoes and axes opened up its valleys to cultivation ; hunters and herdsmen blazed the trail through the primæval forests ; mariners in dug-out canoes sailed the seas to the isles of the West ; prospectors with picks of horn and flint revealed the

treasures of the earth and crossed mountain passes in search of merchandise. These explorers were the forerunners of Greeks and Phœnicians ; the paths they discovered have been followed by Roman roads and modern railways.

The monuments of early man are but insignificant bits of flint and stone, bronze and baked clay. Yet such fragments embody concretely the achievement of our spiritual ancestors. In such rude implements are revealed the preconditions of our gigantic engines and of the whole mechanical apparatus that constitutes the material basis of modern life. Progress is an indivisible whole in which the invention of a new way of hafting an axe formed a necessary prelude to the invention of the steam-engine or the aeroplane. In the first innovations the germs of all subsequent improvement were latent ; and the first steps on the path of discovery were the hardest. Thus the achievements of our nameless forerunners are in a real sense present in our cultural heritage to-day.

In conclusion, I should like to express my deep indebtedness to many workers in the same field, not excepting those whose conclusions I have been unable to accept. Moreover, to supplement their published works which I so often cite, Mr. M. C. Burkitt, Sir Arthur Evans, Mr. E. J. Forsdyke, Mr. W. A. Heurtley, Dr. Ferencz Laszlo, Dr. Adolf Mahr, Mr. Harold Peake, Dr. P. Reinecke, Prof. Tallgren, Dr. P. Vouga, Mr. A. J. B. Wace and others have very kindly given me valuable advice and assistance on several points. To Miss M. Joachim I owe a further debt of gratitude for reading the proofs. For permission to reproduce here illustrations from their publications I am indebted to the courtesy of Dr. Ailio (Helsingfors), the Accademia dei Lincei, the Trustees of the British Museum, the British School at Athens, the Editors of the *Bullettino di Paletnologia Italiana*, the Cambridge University Press and Messrs. Wace and Thompson, the Comisión de Investigaciones paleontologicas y prehistoricas and Prof. H. Obermaier (Madrid), Sir Arthur Evans, Prof. Kozłowski (Lemburg), the Greek Ministry of Public Instruction, Dr. Hans Reinerth and the Urgeschichtliches Institut (Tübingen), Dr. J. Schránil (Prague), Mr. R. B. Seager (Crete), Dr. H. Seger (Breslau), the Royal Anthropological Institute, the

Society of Antiquaries of London, the Société des Antiquaires du Nord (Copenhagen), the Société d'Anthropologie de Bruxelles, Dr. Stocký (Prague), the Schweizerisches Landes-Museum (Zurich), Prof. A. M. Tallgren (Helsingfors), Prof. Tsountas (Athens), the University of Bordeaux, Faculty of Letters, the K. Vitterhets, Historie och Antikvitets Akademien (Stockholm) the Director of the Prähistorische Abteilung of the Museum für Völkerkunde (Berlin), Dr. P. Vouga (Neuchâtel), and others.

I might add that the index is especially designed to enable the layman to locate at once the explanation (usually illustrated by figures) of the technical terms inevitably employed. The addenda will allow the reader to gauge the progress made in prehistory while this book was actually in the press.

V. GORDON CHILDE.

THE DAWN OF EUROPEAN CIVILIZATION

CHAPTER I

The Survival of the Food Gatherers

It has been customary to divide the history of human civilization at least in Europe into two main phases, the palæolithic or old stone age on the one hand and the neolithic and metal using ages on the other. Throughout the long palæolithic period which reaches back far into geological time, man remained in a state of helpless barbarism, a mere food gatherer dependent for his livelihood on the products of the chase and fishing supplemented by such wild nuts and berries as mother Nature might provide. Palæolithic man had no domestic animals, save the dog and that only late in the epoch, practized no agriculture, was ignorant of pottery, and did not polish stone or flint. The neolithic period saw man master of his own food supply through the possession of domestic animals and cultivated plants, and shaking off the shackles of environment by his skill in fashioning tools for tree-felling and carpentry, by organization for co-operative labour, and by the beginnings of commerce. The study of the palæolithic period belongs to the history of humanity as such. European civilization as a specific and individual expression of human activity only began to take shape during the neolithic epoch.

But the two epochs can no longer be regarded as standing over against one another sharply contrasted and separated by an impassable gulf. The neolithic arts were not suddenly introduced complete and fully developed into an empty continent as our forefathers imagined. A whole series of intermediate stages have come to light to fill the old hiatus.

The transitional cultures are sometimes called mesolithic, but the term epipalæolithic is better; for the remains which fill the gap in time do not certainly lead on to the new civilization; only in their light we can recognize palæolithic survivals, albeit as vanishing moments, in the nascent civilization of our continent. However some authorities would in effect deny any fundamental cultural distinction between two periods and attribute to palæolithic man in Europe some of the discoveries traditionally reserved for his neolithic heirs. Dr. Bayer, of Vienna, goes so far as to ascribe the beginnings of agriculture to the Lower Palæolithic inhabitants of southern Europe. Later on in the ice ages, he says, they migrated, taking their civilization with them to Africa and Asia and only returned at the end of our reindeer age.[1] Even if Bayer's thesis be correct, the Lower Palæolithic is separated from the neolithic by long ages in which food-gatherers developed in Europe the series of cultures—Aurignacian, Solutrean, and Magdelenian—constituting Upper Palæolithic industry.

More germane to our enquiry is the criticism levelled at the old sharp distinction by Mr. Reginald Smith.[2] He has pointed out that both in this country and France the remains of species resembling the later domestic animals, short-horned cattle, sheep, and swine, have been found in levels corresponding to the Upper Palæolithic industry. However the domestication of the animals is quite unproven and most competent authorities are more than sceptical of palæolithic stock-raising. The same is true of allegedly palæolithic pottery from some French and Belgian caves and the flint mines of Grimes' Graves in Norfolk.[3] The Belgian "sherds" ascribed to the Acheulean epoch dissolved when moistened and the pots attributed to the reindeer age seem to be identical with the late Danubian pottery from the neolithic huts of Hesbaye.[4] If our troglodyte predecessors really had made the advances here claimed for them, the orthodox view of the position of Britain and Western Europe in the history of civilization would need revision. But it

[1] *L'Anthr.*, XXXIV, p.132.
[2] *Arch.*, LXIII, pp. 145f.
[3] *Ibid.*, p. 151; cf. *C.P.F.*, 1909, pp. 235f. and (3) p. 166.
Numbers refer to the bibliography at the end of each chapter.
[4] *B.S.A. Brus.*, XXV, p. LXXX.

is, to say the least, very curious that the countries which were supposedly so far advanced in the palæolithic age, should be demonstrably very backward in neolithic times. And their backwardness is most marked in the ceramic sphere. In Belgium, apart from the Danubian huts of Hesbaye, neolithic pottery is admittedly poor and rare, while Britain has nothing to compare with the long series of splendid wares from the Ægean, the Danube valley and Scandinavia, which are all older than our bronze age. If palæolithic pottery is to link the old stone age to the new, then the contribution of the former age to European culture is negligible. The hiatus is only recreated. The traditional position may thus be retained. But there were real and demonstrable survivals which will better repay study.

The Azilian-Maglemose Phase

Already during the Upper Palæolithic epoch two cultural provinces must be distinguished in western Europe. In the south an intrusive culture coming from Africa, called Capsian ruled, while in northern Spain, France, Switzerland and Belgium the series was evolving which culminated in the bone and horn culture of the Magdelenian reindeer-hunters. Capsian industry was typified by small finely worked flint flakes whose ultimate form was the pigmy flint or microlith. The northern series was based on the large flake, but even here in the reindeer age the sizes were diminished and bone tools were more typical than flints. The authors of both cultures were simply food-gatherers, but the Capsians were more advanced, having domesticated the dog and being skilled with the bow. Both peoples were consummate artists, but again Capsian art was superior in that it could depict complete scenes as against the isolated figures of the French cave paintings and engravings. The Magdelenians were a long-headed race. No skeletons certainly belonging to the palæolithic Capsians are known, but their paintings depict figures with exaggeratedly fat buttocks.[1] Such steatopygy reappears in early neolithic figurines in the eastern Mediterranean and is even to-day regarded as a mark of beauty in

[1] (1) p. 14.

parts of Africa. So it provides additional proof of the African origin of the Capsians.

Such were the dominant cultural groups in western Europe at the close of the glacial period. As modern climatic conditions approached, the reindeer which the Magdelenians had hunted in France, gradually withdrew northward and some of the hunters followed them. At the same time Capsians advanced across the Pyrenees. In the epipalæolithic epoch Capsian culture is represented by the shell-heaps of Mugom in the Tagus valley, by a series of conventionalized

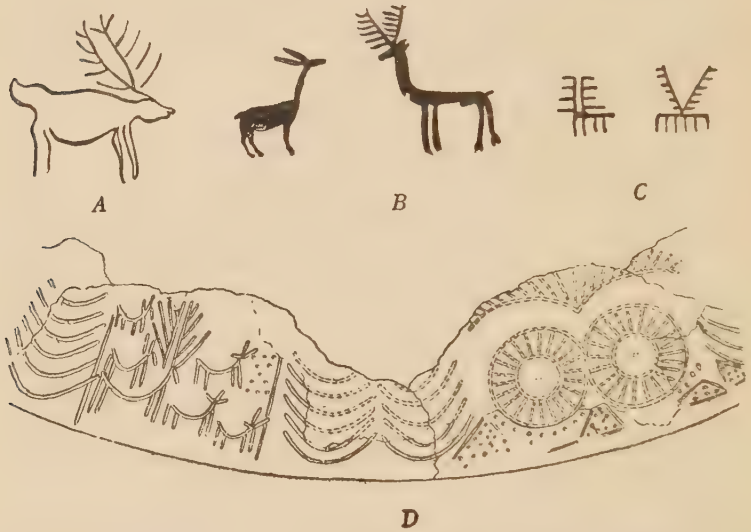

FIG. 1. Conventionalization of Cave Art in Spain. Stags: A, from Maimón; B, from Figuras; C, from La Pileta; D, on vase from Los Millares. After H. Obermaier.

paintings and microliths in the caves of Southern and Central Spain and perhaps by the so-called Grimaldi strata in Upper Italy. The Mugom shell-heaps are formed by the kitchen-refuse of a very poor population of hunters and fishers living upon the shore. Among the masses of shells and bones of game (deer, wild swine, *canidæ*, *felidæ*, *equidæ*) were innumerable microliths especially the "transverse arrow-head," Fig. 2, and a few rough implements of bone. Pottery only occurs in the overlying vegetable layer. The hunters buried their

dead doubled up in the mounds themselves. Long-headed types with marked prognathism and distinctly negroid features predominated, but a short-headed element was already present.[1] These Portuguese brachycephals form the basis of Bosch Gimpera's conclusion that the Capsians were themselves a mixed race, including " Mediterranean," negroid and short-headed strains.

In the centre of the Iberian Peninsula the Capsians continued to decorate the walls of their rock-shelters with drawings which exhibit every degree of conventionalization from the delightful naturalism of the palæolithic paintings (Fig. 1, A), and take us down into the full chalcolithic epoch ;

FIG. 2. " Transverse arrowheads," from Mugom and specimen from Denmark to show hafting. ($\frac{1}{1}$)

for late neolithic idols and even copper daggers are depicted in the caves and the post-palæolithic art is represented on the walls of megalithic tombs and on copper age vases,[2] Fig. 1. This conventionalization does not, of course, mean a degradation of aesthetic taste ; for the cave paintings were no spontaneous expression of art for art's sake, but served severely practical, i.e., magical, ends. The substitution of an abbreviated symbol for a life-like representation thus marks the progress from concrete to abstract thinking. The mysterious burials in the upper levels of the Grimaldi caves are best regarded as a further extension or parallel development of Capsian culture and the same may have advanced to Central France and even further north. On the other hand the Magdelenian tradition survived in Cantabria, on the slopes of the Pyrenees and of the Alps and in northern Europe, in the Azilian and Maglemose cultures. Such a scattering of the descendants of the reindeer men looks very much as

[1] (1) p. 15.
[2] *Ant. J.*, IV, p. 140 ; H. Obermaier, *El Dolmen de Soto.*

if they had been pushed to one side and driven northward by advancing Capsians. The Azilian culture takes its name from the discoveries in a stratum at the Mas d'Azil in Ariège that overlies the latest Magdelenian deposit.[1] The industry here revealed is evidently just a degeneration of the Magdelenian. The flints and bone implements carry on the old tradition with less skill. Harpoons are still very numerous, but now like the Cantabrian harpoons of Magdelenian date (Fig. 3, 1) they are made of the horn of deer instead of reindeer, and are perforated for hafting,[2] Fig. 3. The degeneration of palæolithic art is seen in the signs painted upon polished pebbles. The dead were interred in the

FIG. 3. 1, Magdelenian Harpoon, Cantabria and 2, Azilian types, Ariège. (⅔).

caves covered with red ochre as in palæolithic times. Agriculture and domestic animals were unknown. Azilian remains are found pure in south-west France, north Spain and on the Alpine slopes as far as Birseck, near Basel, and Offnet in Bavaria. At the latter site a cave contained a number of skulls buried separately, including several round heads and many mixed skulls. The Azilian forms here were not very typical, so that the burial should perhaps be regarded as Tardenoisian rather than Azilian.

The Tardenoisian industry of France and Belgium is claimed by Bosch Gimpera as a distinct culture contemporary with the Azilian, but introduced by the advancing Capsians. To these he attributes the brachycephals of Offnet. Now

[1] (3), p. 75, fig. 26.
[2] *Anthropos*, 1919, pp. 160, note 1, and 165.

the industry in question is represented exclusively by microliths. Apart from the material in post-Magdelenian levels in the Belgian cave of Remouchamps[1] and a few similar deposits most Tardenoisian finds are strays without distinct context. The types themselves, Fig. 4, are by no means restricted to the old Capsian province and its assumed extension in France. They are found also in England,[2] Westphalia[3] and Thuringia.[3] And the latter group links on to a series extending from Lithuania through Little Poland, the Chernigov, Kiev, Kherson, and Kharkov Governments of South Russia, to the

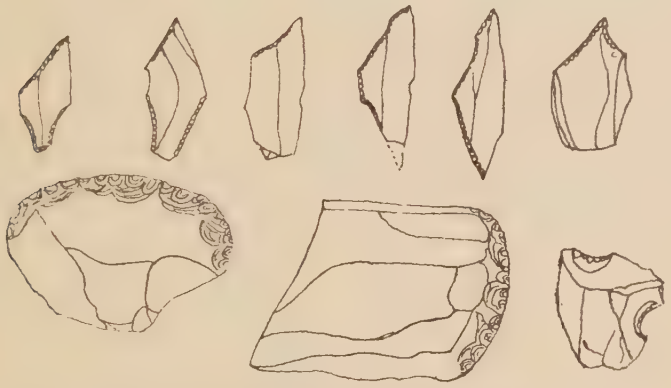

FIG. 4. Tardenoisian types, Remouchamps. After Rahir. ($\frac{3}{4}$.)

Crimea, the Kuban Valley, and the Kirgiz steppe,[4] not to mention Mesopotamia and India.[5]

Nor does microlithic industry always belong to a single or early period. At Er Lannec in Brittany, Franchet has identified a microlithic industry showing many Tardenoisian types in a bronze age context[6] and on the Kuban the microliths come from a copper age grave. On account of the wide distribution of Tardenoisian types both in space and time, de Morgan and others hesitate to treat Tardenoisian as a

[1] *B.S.A. Brus.*, 1920, pp. 80ff., but the reindeer and the Arctic fox still survived at the time of this deposit.

[2] Lincolnshire, Northumberland, and the West Riding, cf. *Ant.J.* II, p. 376.

[3] Schumacher, *Siedelungs-und Kulturgeschischte*, p. 16.

[4] (9), p. 263 and plates: Ailio, *SYMA.*, XXIX, p. 5.

[5] e.g. *B.M.G. Stone*, p. 115.

[6] *R.E.A.P.*, 1922, p. 215.

distinct industry. And even if it be so regarded its affiliation with the Spanish Capsian is questionable. The types may often be regarded as descended from the Magdelenian.[1] And, if a foreign origin be sought, it might in view of the eastern series as easily be found in the south-east as in the south-west.

Apart from the sometimes questionable Tardenoisian there is little evidence for an epipalæolithic population in North France. However in Britain true Azilian types have been found. The pebbles and harpoons from the Victoria cave near Settle are very characteristic and the finds from shell-heaps in Oronsay and the MacArthur cave near Oban connect on with them.[2] The latter cave was on the sea-shore when Azilian man occupied it. To-day it is twenty-five feet above sea level, so that the land must have been raised by that amount in the interval! But the Scottish Azilian shows peculiarly close affinity with the Maglemose culture of Denmark.[3] And some harpoons found twelve feet deep in the peat of Holderness[4] might have come from the Baltic. That is by no means impossible. There was once a land bridge where the Dogger Bank now lies, and the geological evidence suggests that it may have been still above water in Maglemose times. We may then cross that bridge to see the Maglemosians at home.

The Maglemose culture[5] was the creation of a fisher-folk who had settled on the shores of what became the Baltic. But in their days it was a land-locked lake called after the typical mussle that lived in its waters, the Ancylus lake. The fishers settled on its shores, sometimes, as at Maglemose itself,[6] dwelling on a raft-like platform of wood. Besides fishing they trapped wild fowl, including the swan, and hunted the elk and the aurochs (*Bos primigenius*). Their characteristic implements—harpoons, fish-spears, and chisels of bone and horn (Fig. 5)—clearly derive from Magdelenian types, while survivals of palæolithic art are recognisable in engravings on bone or horn. For these reasons most authorities agree in

[1] *B.S.A. Brus.*, l.c., p. 91.
[2] *Arch. Jour.*, LXV, pp. 230ff.
[3] Breuil in *P.S.A.S.*, LVI, p. 280.
[4] *Proc. P.E.A.*, IV, pp. 59ff.
[5] Also called in Scandinavia the Mullerup culture.
[6] Near Mullerup in Zealand *P.Z.*, III, pp. 72ff, VI, pp. 1ff; cf also (8), (7), and (5).

treating the fisher folk of the Ancylus lake as descendants of the Magdelenians. On the other hand, microlithic flakes, some of which look very like Tardenoisian work, are very numerous in Maglemose stations, and were sometimes used to arm harpoons. Hence, if the microliths are not descended from the Magdelenian, some admixture with other elements must be assumed, Bosch Gimpera says with Capsians.

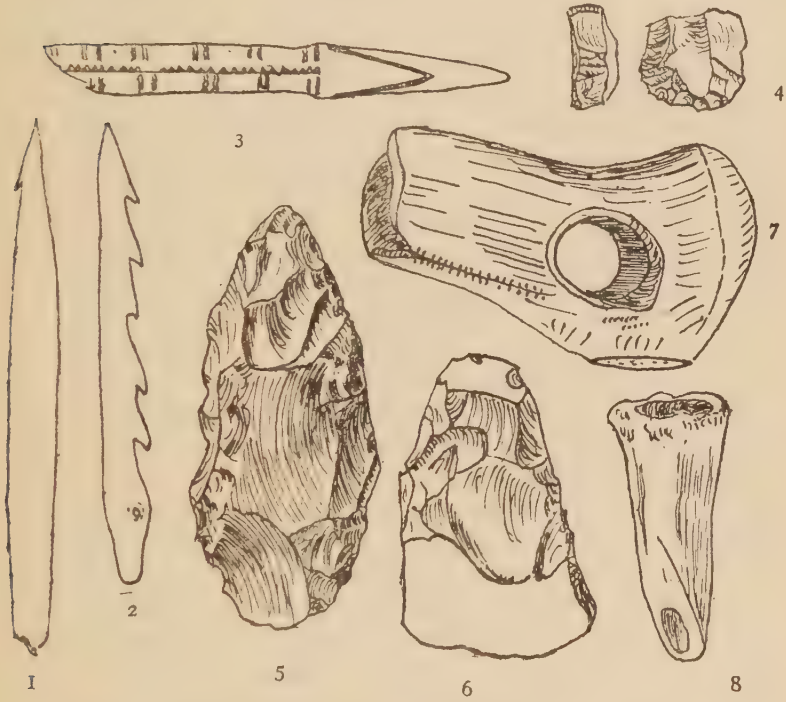

FIG. 5. Maglemose types. 1-3 and 7-8, ($\frac{1}{2}$); 4, ($\frac{1}{2}$); 5-6, ($\frac{1}{6}$).

In any case Maglemose industry shows important advances over both Magdelenian and Tardenoisian. Flint was not only used in flakes, but was worked up into implements for cutting and hacking, hatchets (*tranchets*) and picks, Fig, 5, 6 and 5. Such tools were often fitted into sleeves or perforated hafts of deer's horn. So the Maglemosians had axes and adzes and their command over nature was thereby enormously extended. Moreover, at least if we may judge from skulls found in a

stratum in Mecklenburg and Brandenburg,[1] contemporary with the Ancylus lake, a brachycephalic element was now present in the population. Remains of Maglemose industry are found outside Denmark, in Yorkshire, Mecklenburg, Central Germany as far south as Kalbe on the Milde, Pomerania, Prussia, and Norway.[2] The Maglemose culture was thus circum-Baltic in range.

Maglemose raises in an acute form two problems—the origin of the axe and of the short-heads in Europe. There is general agreement that the hatchet and pick of chipped flint from Maglemose must somehow be connected with the hand-axes used by the men of the Lower Palæolithic.[3] But how? In Europe such forms seem to be lacking in Upper Palæolithic deposits, at least of the Solutrean and Magdelenian periods. So an immense gap appears to separate the old hand-axes from the hatchets and picks which appear at Maglemose and in the latter Campignian culture of France. But perhaps the gap is not really so complete. There is some evidence that a remnant of the older people survived in Italy into neolithic times and continued to produce forms parallel to those in question.[4] Some similar survival may have taken place in other parts of Europe. In Dordogne very primitive anthropological types persist to the present day and a series of celt forms can be constructed leading from the hand axe to the neolithic celt. At Spiennes in Belgium, Rutot[5] claims to have found a continuity of industry from Chellean to Campignian. R. A. Smith has shown how a series of intermediate forms from Grimes Graves might illustrate the evolution of the hand-axe to the celt.[6] In North Ireland "Campignian" hatchets and picks from a level corresponding geologically to the Azilian deposit near Oban, are found at Larne, where hand-axes are also common.[7] And the absence of the hand-axe from Magdelenian levels is not quite certain.

[1] But Schliz considers these skulls to be "late neolithic"—(6) pp. 15f. No skulls were found at Maglemose but a skeleton, unfortunately very defective, from Svaedborg shows very primitive traits. *Ymer*, 1924, p. 52.

[2] Also *L'Anthr*, XXXIV, p. 110.

[3] (3), pp. 36ff and figs. 8f.

[4] *Riv.*, XXV, p. 212; *M.A.*, XXVI, pp. 1-170.

[5] *Ant. J.*, I, p. 55.

[6] *Arch.*, LXVII, pp. 49-74.

[7] *J.R.A.I.*, XLIV, pp. 84ff.

Others look to an invasion. Bayer and Myres seek continuity with the hand-axe culture in Africa and bring in the celt presumably with the Capsians. But the best authorities on that special culture oppose it sharply to the Campignian.[1] More recently some German and Swedish scholars[2] have attributed the introduction of the axe and the short-headed element into north Europe to the so-called Lingby culture, which belongs to the end of the ice-age or the very beginning of the Ancylus period. The evidence consists in a series of implements of reindeer horn in which the sprouts have been broken off and roughly shaped as a sort of blade or hammer-head (Fig. 6). The type is found at Lingby in Zealand, and in the south of Norway, Mecklenburg, Brandenburg, Pomerania, Poznania, and Silesia. Some arrow heads

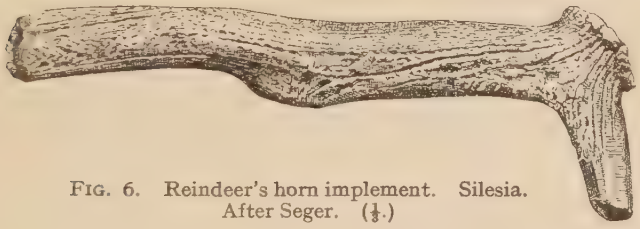

FIG. 6. Reindeer's horn implement. Silesia. After Seger. (⅓.)

found with them at Lingby are so like those of the Chwalibogawice culture[3] of the Polish sand-dunes (Fig. 7) that it too may belong here. On this view the horn implements constitute the prototypes of the flint hatchets and picks later made by the Maglemose folk. But neither Friis Johansen nor Nordmann[4] admits any connection between Lingby and Maglemose and there is no evidence that the Lingby people were short-headed.

Finally, Christian and Peake[5] would derive both the round heads and the axes from Asia. The strength of their

[1] (1) p. 35.

[2] *AfA.*, XX, pp. 1ff; *Ymer*, 1924, pp. 45f, with figures and map. Montelius' proposal to regard some amygdaloid flints as evidence for the presence of Solutrean man in Scandinavia seems impracticable; cf. *ZfE.*, LII, p. 532; they were being made in late neolithic times, *F.M.*, 27, p. 8.

[3] (9) p. 202. It is older than the local Tardenoisian.

[4] (5), p. 349, (7) p. 27.

[5] *Anthropos*, 1922-3; *J.R.A.I.*, XLIX.

theory lies in the complete absence of brachycephals from palæolithic Europe, or as far as we can judge from North Africa. But of course a local evolution of a new anthropological type is no impossibility and we have already seen that Bosch Gimpera associates short-heads with the Capsians. Archæologically evidence for an east to west movement is rather scanty. On the east coast of the Baltic the material from Kunda in Esthonia exhibits, especially in the bone work, the most intimate relation to Maglemose,[1] but new forms such as the spear head with triangular cross section should denote a distinctly later phase of that culture. Even at Pernau in Latvia, Maglemose forms recur, but apparently with comb-ornamented pottery which is not even early neolithic.[2] Finally, the Arctic culture further north and east,

FIG. 7. Chwalibogowice types, Little Poland. After Kozłowski. (⅓.)

though clearly rooted in Maglemose, exhibits ever later traits as we pursue it eastward. On the other hand, primitive flint and stone implements like those of Maglemose do occur in north and central Russia,[3] but usually at sites where later objects are also forthcoming. The archæological evidence is thus unfavourable or at least inconclusive. Nor can the archæological and anthropological data be co-related; for both at Offnet and Mugom short-heads appeared where no trace of an axe was visible. If short-heads do come from Asia, they must be connected with the microlithic industry, not with the Campignian aspect of Maglemose. The local origin of the celt-like forms in Europe remains the most attractive hypothesis.

[1] (8) figs. 13-18.
[2] *P.Z.*, V, p. 518.
[3] Cf. Chap. XIV, *infra*; and *SMYA.*, XXIX, pp. 1of.

If the last paragraphs have led to a somewhat negative conclusion, the negation is itself significant. Classical pre-history both in France and England has been wont to account for the neolithic culture in Europe by postulating an invading flood of short-heads from Asia. But now Mugom and Offnet reveal brachycephals still in a purely " palæolithic " food-gathering stage of culture, while in North Germany and Scandinavia the only addition to the palæolithic armoury is the chipped flint hatchet. The picture of hordes of Asiatic round-heads with loads of jade upon their back, driving herds of swine across the Russian steppes (!) must be relegated to the limbo of the past. So far we have not found the neolithic culture. The people hitherto described, round-heads and long-heads alike, were pure food-gatherers and their culture from Portugal to Esthonia is rather a prolongation of the old stone age than a transition to the new. Such a transition has, however, been claimed for the succeeding period in Scandinavia.

The Campignian-Ertebolle Phase

The sinking of its east coast had then united the North Sea with the Baltic once more, so that the Ancylus lake became the Baltic Sea. But the climate was warmer than to-day. The newly-formed gulf swarmed with fish, the periwinkle, *Litorina*, being the species that gives its name to the period. The oak replaced the pine, which had previously been dominant in the forest, but the fir and the beech had not yet arrived. Geologists have made various estimates of the date of these changes. The authorities followed by Kossinna place the Ancylus period from 10,000 to 6,000 B.C., and the Litorina epoch between 6,000 and 4,000 B.C.[1] Brooks on the other hand suggests 6,000 to 4,000 B.C.[2] as the date of the Ancylus lake and dates the Litorina sea between 4,000 and 3,000 B.C.

The changed conditions due to the inrush of salt water would naturally affect profoundly the manner of life of the inhabitants of Scandinavia. The famous shell-heaps or kitchen-middens of Denmark may be the monuments of the

[1] (6) table at end.

[2] *Man*, XXI, 58.

Maglemose people adapted to the new environment. The culture of these sites in Denmark is called after the type station, " Ertebolle," and has a parallel in Sweden and Norway in the Limhamn and Nøstvet cultures. On the other hand both in Sweden and Norway there are sites belonging to the Litorina period which preserve the Maglemose tradition in a purer form and possibly the Kunda culture may belong here too.

Ertebolle shows many differences from, as well as many resemblances to, Maglemose. The people still supported themselves exclusively by hunting and fishing and possessed no domestic animals save the dog. The dead were just buried under the dwelling places without any regular grave or funeral ritual. Dolichocephalic skulls are said to be in the majority.[1] Many old forms such as fish-spears, picks, and hafts of horn and discoid scrapers of flint persist (Fig. 5, 4). But bone and horn played only a minor rôle in the new industry. Flint was now freely used for the manufacture of the hatchets and picks which in Maglemose had been relatively rare. Microliths entirely disappeared, save for the transverse arrow-head (as in Fig. 2), which, previously scarce, abounded exceedingly in the kitchen-middens. In Norway and Sweden volcanic stones were used instead of flint as the material for hatchets and picks, but the rock was treated just like flint and simply hacked and chipped (Fig. 103, 1). In the upper levels only of the old shell-heaps appear clumsy stone celts with an almost round cross section in which the blade has been formed by grinding instead of chipping. Such a technique is proper to stone and its application to flint may have produced the polished flint celt which characterizes the neolithic period. Finally the Ertebolle people had learned to make coarse round bottomed pots of baked clay (Fig. 8).

Some authors, stressing the contrast between the industry of Maglemose and Ertebolle and at the same time the persistence of the former elsewhere, incline to assume the intrusion of fresh people at the end of the Ancylus period.[2] But really it looks more like a case of adaptation and differentiation. A site like Brabrant in Jutland serves to link the two cultures. It was a settlement of fishers dwelling on a raft on the shore of an inland lake, just like Maglemose, but the artefacts

[1] so (6). [2] (5) p. 350.

are mainly of Ertebolle type and pottery is found save in the lowest stratum.[1]

The Ertebolle pottery may be due to a cultural borrowing. Apart from that we have a continuous development on the shores of the Baltic from the end of the palæolithic age. And the kitchen-middens continue into neolithic times. Above a shell mound in Langeland vases and celts of the full neolithic period were found. At Limhamn in South Sweden, the bones of domestic animals and grains of wheat appear in the upper levels, and in other later shell heaps objects of passage-grave type occur. Does all this mean that the neolithic civilization arose spontaneously in Scandinavia ?

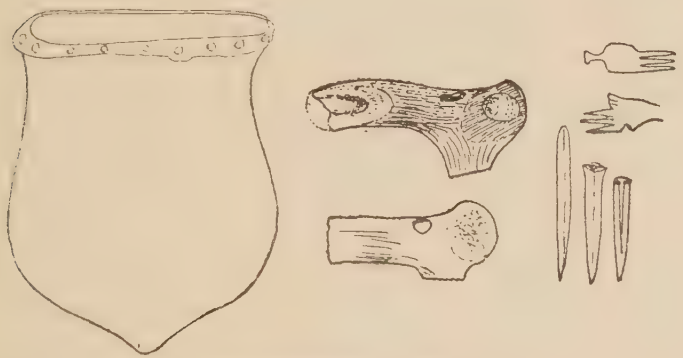

FIG. 8. Ertebolle types. After M.S.A.N. ($\frac{1}{8}$).

Kossinna and a large school of German and Swedish archæologists answer this question in the affirmative. The Berlin professor believes that in the Litorina period the original Maglemosian population of mixed long-headed and short-headed types was differentiated. The short-heads being less adaptable, kept to the fresh water in inner Sweden and the East Baltic, creating the Arctic culture. He considers that they were the ancestors of the Finns. Some of them migrated eastward and may, he thinks, have reached even Mesopotamia, where they would appear as the Sumerians.[2] The more adaptable dolichocephalic element were the ancestors of the

[1] *M.S.A.N.*, 1904, esp. p. 232 ; note the wooden boomerang.
[2] (6) p. 33.

Indo-Germans. They created the Ertebolle culture of Denmark and sent out colonists to France and Britain to found the Campignian culture there. The Ertebolle folk are credited with the domestication of the local (*sic*) animals and began to cultivate the local (*sic*) grains! Finally, by applying to flint the technique acquired in dealing with the Nøstvet celts of stone, they created the polished flint celt which marks the beginning of the true neolithic period.

Kossinna's view is both clear and economical. The reference to the Sumerians is extravagant, but it is only incidental. Nevertheless the theory is not convincing. The Ertebolle culture was, apart from the coarse pottery, just a continuation of the palæolithic. Agriculture and domestic animals and the polished stone celts appear simultaneously with other fundamental innovations, the adoption of a definite funeral ritual with regular tombs, the dolmen and the separate earth-grave under a barrow, and a new style of pottery; for the " neolithic " finds in late shell-mounds look like borrowings. Kossinna himself admits that the idea of the dolmen came from without—he says from Ireland—and the pottery from the dolmens shows no relation to Ertebolle types. On the other hand, outside the dolmen region, restricted to the coasts and islands, and Jutland, where the separate graves occur, the old epipalæolithic culture continues with the same absence of burial rites as before, and pottery which, unlike that of the dolmens, derives from the Ertebolle forms. As time goes on these epipalæolithic people can be seen gradually and piecemeal adopting elements from the higher civilization of the coast. The conjunction of so many new features at the beginning of the neolithic period and their juxtaposition to survivals of the epipalæolithic culture certainly produces the impression that something new has arrived from without.

Secondly, I know of no competent botanist who is prepared to derive the cultivated grains from wild grasses growing in Denmark in the Litorina period. Even Much in his onslaught on the *mirage orientale* could not place the homeland of wheat further north than the shores of the Mediterrenean.[1] Finally a connected study of the early civilizations of southern and central Europe will show that

[1] *M.A.G.W.*, 1908, pp. 200ff.

Scandinavia was not ahead of other countries, but rather a backwater. Everyone admits that the use of iron began late there. The same will be shown to be true of the bronze age, and it is reasonable to assume that the principle is equally applicable to earlier periods. Everything then points to neolithic culture having begun where the use of metal also began—somewhere to the south. The proof of that contention must await a fuller exposition of developments in that direction. For the moment Kossinna's thesis must be left in suspense. In the meanwhile the remaining epipalæolithic cultures that are chronologically parallel with Ertebolle may be reviewed.

The Iberian peninsula has recently put in a claim to be regarded as the home of civilization. Now in North Spain, on the coasts of the Bay of Biscay, the Asturian forms a suitable counterpart to Ertebolle ; for the remains of this culture are found superimposed on the local Azilian strata, which latter correspond to Maglemose. The Asturian was the creation of a miserable population of food-gatherers who dwelt in caves on the shore and lived largely on shell-fish. They have left huge mounds of shells in front of the caves, but artefacts are rare and poor. The most typical product of human handiwork is a rough quartzite pick used for detaching shell-fish from the rocks. In the last phase of the culture a little coarse pottery burnt only on the inside appears.[1] No originality has ever been claimed for this poverty-stricken remnant of the Magdelenians.

But in southern Spain we are offered nothing parallel to the Asturian, save the conventionalized[2] cave paintings which are wanted to fill the Azilian phase and actually reach down into the copper age. The only reasonable explanation of this apparent gap is surely that a truly neolithic culture was already established in the south of the Peninsula while a degraded remnant of food-gatherers lingered on in Asturia. The origin of the Iberian neolithic cultures must be reserved for a special chapter. Here it will suffice to note that one of them, that of Almeria, is admittedly intrusive.[3] Since our survey of the Mugom shell-mounds and the epipalæolithic culture of the caves did not reveal the transition from

[1] (4) pp. 334f. ; cf. *Proc. P.E.A.*, IV, p. 43.
[2] (1) p. 22 ; cf. p. 5 *supra*.
[3] (1) p. 26.

food-gathering to food-production, the introduction of the neolithic culture to Spain as a whole may be provisionally attributed to the Mediterranean colonists of Almeria.

In France, Belgium, Britain, and parts of Germany and Italy, the culture known as Campignian is supposed to fill the second half of the old hiatus, and to run parallel to Ertebolle. It fills that span of time, and much more. The types characterizing the Campignian—the unpolished flint hatchet and pick (Fig. 5, 6 and 5)—have already been met at Maglemose. But such flaked flint types are no more confined to one single chronological period than are microliths. It has recently been proved that in the Department of Yonne typical Campignian *tranchets* (hatchets) remained in use till the full iron age.[1] In Italy[2] the same types were fabricated by barbarous remnants of food-gathering tribes living in isolated valleys surrounded by a population enjoying the full neolithic culture and perhaps the knowledge of copper. The contemporary flint miners of Spiennes in Belgium, were equally without agriculture or domestic animals till these were borrowed from their "Omalian" neighbours. The latter were Danubians who reached Belgium in late neolithic times, as will appear in chapter XII. So the Campignian industry is not necessarily early nor are its authors in a phase of transition between the new and the old stone ages.

But at the type station, Campigny in Seine Inférieure, the occupants of the pit-dwellings already possessed domestic animals, tilled the soil, made pots with handles, and decorated them with incisions. The epipalæolithic date of the settlement rests solely upon the discovery of polished flint celts in the humus above the huts. But, alas! de Morgan remembers finding in one hut a polished celt which had been re-shaped by flaking, a procedure often adopted in Denmark at the end of the neolithic period.[3] So Campigny is not epipalæolithic at all, but merely a wretched survival of an antiquated industry into neolithic times. It sends us elsewhere for the explanation of its vases, its grain and its herds. Perhaps the Danubians, who introduced these gifts into Belgium, performed a like service for North France.

[1] Hure, *Le Sénonais préhistorique*, p. 43.
[2] *Riv.*, XXV, p. 212.
[3] (3) p. 79.

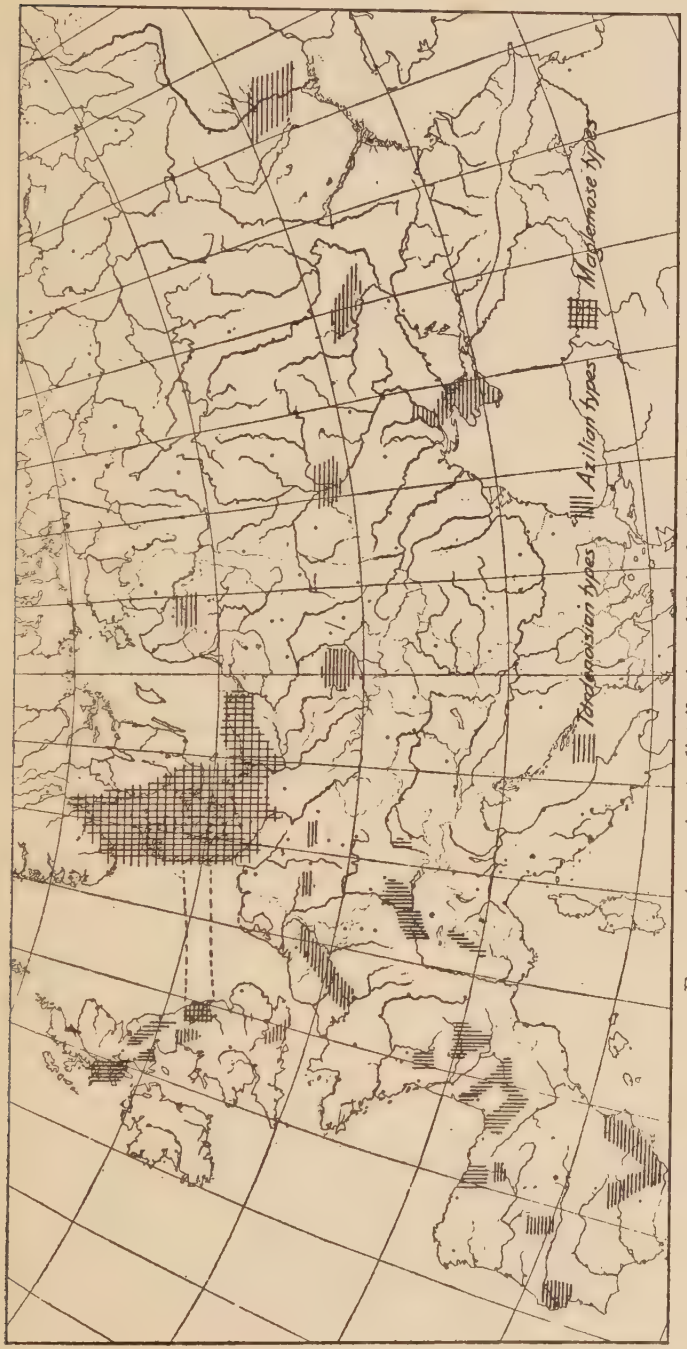

FIG. 9. Approximate distribution of Epipalæolithic Industry.

The conclusion from the foregoing discussion then is that, though the epipalæolithic cultures do fill a gap of time and prove the continuous occupation of parts of Europe from the old stone age, they do not in any real sense constitute points of transition from the palæolithic to the neolithic culture. Rather does the advent of the latter point away from northern and western Europe just as clearly as it did in the days of the hiatus. And so really do the epipalæolithic cultures themselves. Is it not curious that, in regions such as the Danube Valley and Thessaly, where the neolithic civilization began early and where a rich continuous series of successive cultures reaching without a break to the iron age is illustrated by plentiful finds, epipalæolithic remains are non-existant ? The latter are most numerous on the other hand in just those regions where the iron and bronze ages at least can be shown to begin late—Central Russia, the Baltic, and France (Fig. 9). In the latter areas continuity of occupation and development such as we have in the Danube Valley and Greece can only be obtained if the beginning of the neolithic civilizations be put late. We shall therefore follow this clue and continue our search for the foundations of European civilization in the south-east.

But to conclude this chapter it may be convenient to summarise the sequence of epipalæolithic cultures in the following table.

Date.		Baltic.	Central France.	Scotland, Alps, and Pyrenees.	Portugal and Spain.
Brooks. B.C.	Kossinna. B.C.				
6000 to 4000	10,000 to 6000	Maglemose. (Ancylus lake.)	Tardenoisian.	Azilian. (25ft. raised beach).	Mugom, conventionalized paintings.
4000 to 3000	6000 to 4000	Ertebolle. (Litorina sea.)	Campignian.	Campignian and Asturian.	

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(3) J. de Morgan, *Prehistoric Man* (London, 1924). (Illustrated.)

(4) Hugo Obermaier, *El Hombre Fossil.* (Madrid : Comisión de Investigaciones paleontologicas y prehistoricas : Memoria 6). (Illustrated.)

For the North.

(5) Friis Johansen, *Une station dans la tourbière de Svaedborg.* (*M.S.A.N.*, 1918-19.) (Illustrated.)

(6) Gustav Kossinna, *Die Indogermanen.* (Mannus Bibliothek, 26, 1921.) (Illustrated.)

(7) C. A. Nordmann, *Some Baltic Problems.* (*J.R.A.I.*, LII, pp. 26ff., 1921.)

(8) Knut Stjerna, *Före Hällkisttiden.* (*Ant. Tid. Sv.*, XIX.) (Illustrated.)

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(9) Leon Kozłowski,, *Epoka Kamienia na wydmach wschodniej części wyżyny Małopolskiej.* (Warsaw, 1923.) (With German resumé and illustrations.)

CHAPTER II

Minoan Crete and the First Civilization in Europe

The idea of a south-eastern origin for the higher elements in European civilization finds its justification if, instead of groping among the epipalæolithic remains of shell-heaps and cave shelters, we turn for a moment to the lands where the full light of history has shone from the beginnings of the third millennium before our era. The effect of the glaciations of northern Europe must have been to produce in Africa and south-western Asia a moister and more temperate climate than prevails there to-day. While conditions in our Continent only permitted the sort of life still lived by Esquimaux, the contemporary inhabitants of North Africa and Western Asia enjoyed an environment eminently favourable to cultural progress. The archæological facts confirm anticipations based on climatic considerations. The cumulative results of the latest excavations in Egypt and Irak show that the well-known contrast between the respective cultural developments in Europe and the Near East during the early historic period is applicable equally to the prehistoric.

The flint industry of the newly-discovered Badarians in the Fayum is comparable to the European Solutrean. But the Egyptian flint-flakers could already make a fine pottery, black in colour and ornamented by ripple-burnishing or incised lines, that rivals the best neolithic wares of Europe. The date of the Badarian culture is of course a matter of inference, but Petrie's tentative dating between 10,000 and 9,000 B.C.[1] is at least as probable as Kossinna's date for Maglemose. But what a difference between the two cultures! The later predynastic culture is equally comparable to the second half of the epipalæolithic period in the North represented by Ertebolle; for on the shortest chronology it

[1] British School of Archæology in Egypt, *Antiquities exhibited at University College*, 1924. *Catalogue*, p. 1.

reaches back many centuries before 3315 B.C., while on Borchardt's system, which the Germans themselves prefer, it ends in 4186 B.C.! But the predynastic people were already food-producers with a regular system of religious ideas and social organization, capable of forging implements of copper, working hard stone for vases, and decorating their clay pots with painted designs. Still later from the first dynasties a true urban civilization with regular government and widespread commerce flourished in the Nile Valley. Thereafter the archæological record supplemented by written texts is perfectly continuous.

In Mesopotamia and Elam we cannot yet penetrate with certainty so far into the dim past. But to-day it is certain that the Sumerian civilization was mature by 3500 B.C. The Sumerians were already in possession of a script, dwelling in large cities, irrigating the land, using the potter's wheel and casting copper axes of highly developed form.[1] Still older at Ur were the graves of a prehistoric people who made finely painted pottery. And this splendid fabric is itself later than the painted wares of the first settlement at Susa where copper was already in use.[2] This may on a conservative estimate, take us back into the sixth millennium. In any case at the end of the fourth the Sumerian civilization was so highly developed that we must wait till the nineteenth century for a comparison in northern Europe. If Sumerians and Teutons had really started on an equality in Maglemose, the latter must indeed have been a backward and degenerate race!

It must then be admitted that true civilizations had grown up and were well established in the Ancient East while Europe was still sunk in epipalæolithic barbarism. The well-known identity between the earliest domestic animals and cultivated plants of Europe and Asia is therefore a valid argument for the view that the gifts that distinguish the neolithic culture from the palæolithic, came to Europe from the Ancient East. The true originality of our ancestors was displayed not in inventing what early climatic conditions had reserved for others, but in the manner in which they adapted and improved

[1] Results of the last excavations at Kish by Prof. Langdon and at Ur by Mr. Woolley.

[2] Frankfort, p. 59. For Elam see de Morgan, pp. 102 and 208f., figs. 119-120.

the inventions of the Orient. In this sense the early inhabitants of our continent were truly and remarkably creative and before the end of the second millennium had outstripped their masters and created an individual civilization of their own. But it was not the fruit of a miraculous birth, but the result of the diffusion and adaptation of the discoveries of the Orient and it is that which we must trace in this book.

In the process of diffusion and creation the isle of Crete played a foremost rôle. Its geographical position enabled the Cretans to take advantage of advances made in the South and East without becoming dependent either on Egypt or on Sumer. At the same time the limited resources of their homeland obliged the islanders to turn to maritime trade and thereby to diffuse their civilization along the coasts of the Mediterranean and the Black Sea. Palæolithic remains have not been found in the island, but Franchet has revealed in Central Crete an industry characterized by finely worked pigmy flakes of obsidian and roughly chipped quartzite picks which may be older than the neolithic settlement of Knossos.[1]

At the latter site the archæological deposit extends to a depth of 6½ ms. below the oldest Minoan remains. The material collected from trial pits and trenches shows that the "neolithic" Cretans could make excellent clay vases with handles and spouts, and not only polished stone for celts, but could also drill it to make room for the shafts of their spheroid or pear-shaped mace-heads. Wet sand and a hollow reed was used for the perforation, the boring being begun from both ends. This procedure yields a biconical hole; contrary to the old belief, the even cylindrical sockets for which dry sand was probably employed are later.[2] In the latest pre-Minoan levels a flat celt of copper has recently been found, with stone cases of Egyptian type. The houses consisted of agglomerations of rectangular chambers with stone foundations for the walls, so that the prototype of the later palaces was already in existence.[3] Steatopygous female figurines of baked clay reveal to us the ancestor of the Great Mother whom the later Minoans worshipped, and, as Sir Arthur Evans shows by the

[1] *Nouvelles Archives des Missions scientifiques*, XXII, pp. 67ff. figs. 11-12.

[2] (1) p. 54, note 3.

[3] Information kindly conveyed in a letter from Sir Arthur Evans.

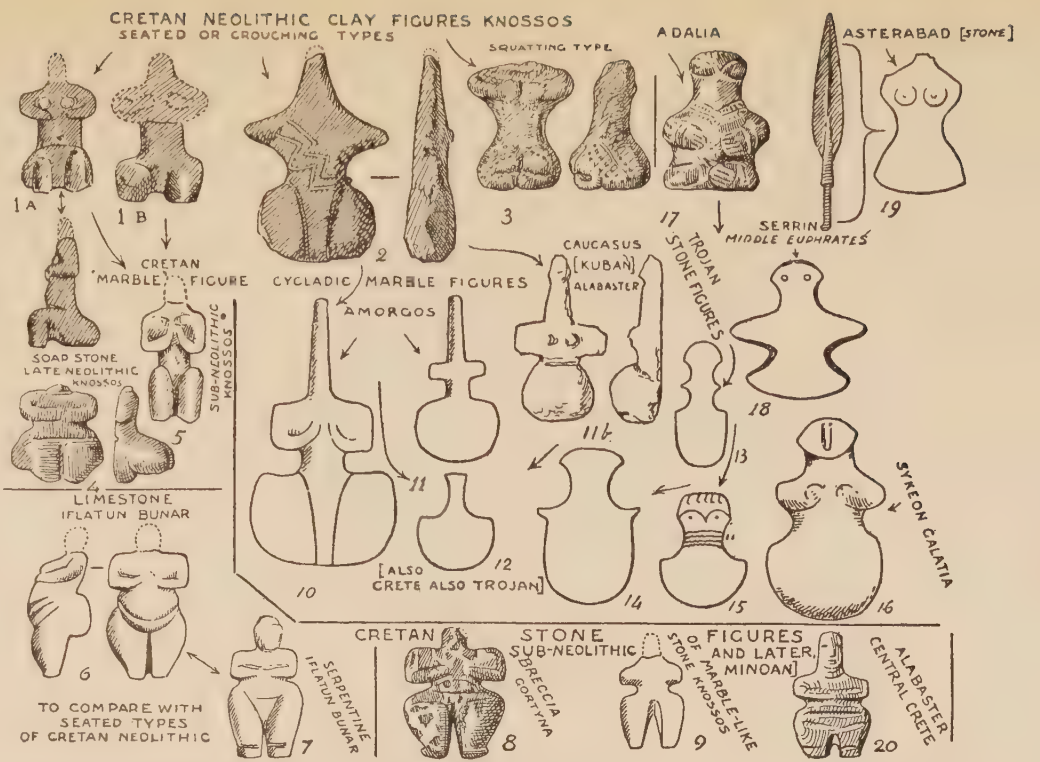


FIG. 10. Neolithic figurines from Crete compared with other types. After Sir Arthur Evans.

diagram here reproduced by his kind permission, stand close to the prototype of a family distributed from Turkestan to Spain (Fig. 10). The use of obsidian proves that the maritime exploits of the Cretans began in the "neolithic" age.

Neolithic Crete may, according to Evans, be "regarded as an insular offshoot of an extensive Anatolian province." The perforated mace-heads and the idols, have parallels as far east as Elam and Turkestan, while a stone stud[1] connects on with some recently found in early Sumerian graves at Ur. On the other hand the steatopygy of the figurines like the loin-cloth worn by the later Minoans has distinctly African affinities and the anthropological type dominant in the island was always Mediterranean or Eurafrican.

At the close of the neolithic period a "quickening impulse from the Nile permeated the rude island culture and transformed it" into the Minoan civilization. Sir Arthur Evans suspects an actual immigration of predynastic Egyptians. Minoan Crete's indebtedness to the Nile is indeed revealed in the most intimate and fundamental aspects of its culture. Not only do the forms of Early Minoan stone vases, the precision of the lapidaries technique, and the aesthetic selection of his materials carry on the predynastic tradition, Nilotic religious customs such as the use of the sistrum and the wearing of amulets in the form of legs, mummies, and monkeys[2] and personal habits revealed by the depilatory tweezers, stone unguent pallettes, and seals found in early tombs betoken something deeper than the external relations of commerce especially in the Messará. But traces of the inspiration of the greater civilization of Sumer are not wanting. The typical Minoan tools and many cult objects such as the dove and the double axe are Mesopotamian rather than Egyptian. The Louvre possesses a vase of the same peculiar shape as the representative E.M. II.-III vessels illustrated in Fig. 11, which comes from Persia,[3] and another comes from Cappadocia.[4] The metallic prototypes which Evans has sought in Egypt, are equally available in the realm of Sumerian metallurgy.[5] The

[1] (1) fig. 15b.
[2] (5) p. 166, figs. 97-101, (8) pp. 128f.
[3] Unpublished.
[4] Chantre, *Mission en Cappadoce*, pl. viii, 3.
[5] *J.Eg.A.*, VI, pl. iii, 2. M. Pottier kindly tells me of another lately found at Susa.

brachycephals who steadily increase in numbers during the Early Minoan age,[1] surely came from the East and not the Balkans. Sargon of Agade, about 2800 B.C., had extended his empire to the shores of the Mediterranean[2] and he may have had predecessors. From the First Middle Minoan period the adoption of the clay tablet as the vehicle for the newly-invented script and a Babylonian cylinder found at Platanos betoken further intercourse with the East.

Finally it should be noted that the continental north, although usually behind Crete, did not fail to exert a reflex

FIG. 11. Early Minoan III Vases. After Evans. (½.)

influence on the island civilization. It was from this quarter that the spiral decoration was introduced into Crete in E.M. III. The button seals of the same epoch are equally foreign in Egypt and Crete, but, in the form of clay stamps, have a long history beyond the Balkans and in Anatolia.

It would be presumptuous to attempt to describe in a single chapter the marvellous civilization that developed in Crete out of these divergent currents. A whole book in this series is devoted to that task. Here I must content myself with justifying two statements—that the Minoan civilization

[1] (3) p. 72.
[2] *Man*, XXI, 97; cf. Peake, *Bronze Age*, p. 108.

was European and that it acted as the intermediary in the transmutation and transmission of oriental discoveries to other parts of our Continent. But it may be convenient to recall that Sir Arthur Evans has divided the prehistory of Crete into nine periods, each of which can be accurately dated by the aid of Egyptian synchronisms. The scheme is as follows:

Period.	Absolute Date[1] B.C.	Egyptian Dynasties.
Early Minoan, E.M.I	3400–2800	before IV
II	2800–2400	IV—VI
III	2400–2100	VI—IX
Middle Minoan, M.M.I	2100–1900	X—XII
II	1900–1700	XII—XIII
III	1700–1580	XIV—XVII
Late Minoan, L.M.I	1580–1450	XVIII
II	1450–1400	
III	1400–1200	

Further to simplify the account of the diffusion of Minoan civilization four main phases may be distinguished—a period of peaceful commercial penetration, a phase of concentration, an epoch of imperial enterprise, and a slow decline.

Already in the Early Minoan period the well-planned cities that needed no wall to defend them, testify to the establishment of an orderly polity and the sovereign sway of law. The citizens sailed the seas in high-prowed ships and amassed great wealth by peaceful trade. This commerce was not concentrated in any part of the island. Even the Cyclades participated in it, but the richest tombs are those of Mochlos in East Crete. In the Middle Minoan period the power was concentrated in the hands of the lords of Knossos, and here in M.M. II a stately palace was erected. Towards the end of the period commercial penetration seems to have led to an imperial domination over the Mainland of Greece and during Late Minoan I and II Greece is just a province of Minoan culture. But this expansion prepared the way for the destruction of Cretan rule. In Late Minoan III Knossos was sacked and the hegemony in the Aegean passed into the hands of the lords of Mycenae.

[1] Of the half-dozen systems proposed for the absolute chronology of dynasties, I to XVII, I follow Evans in adopting Meyer's dates here and throughout this book. Hall increases all dates before 1600 by about 200 years and Petrie by 1461.

We have seen that Minoan civilization was deeply indebted both to Mesopotamia and Egypt. Now I must insist that it was no mere copy of either, but an original and creative force. As such Crete stands out as essentially modern in outlook. The Minoan spirit was thoroughly European and in no sense oriental. A comparison with Egypt and Mesopotamia will make the contrast plain. We find in Crete none of those stupendous palaces that betoken the autocratic power of the oriental despot. Nor do gigantic temples and extravagant tombs like the Pyramids reveal an excessive preoccupation with ghostly things. The consequences of this distinction are reflected in Minoan art. The Cretan artist was not limited to perpetuating the cruel deeds of a selfish despot nor doomed to formalism by the innate conservatism of priestly superstition. Hence the modern naturalism, the truly occidental feeling for life and nature that distinguish Minoan vase paintings, frescoes, and intaglios. Beholding these charming scenes of games and processions, animals and fishes, flowers and trees we breathe already a European atmosphere.[1] Likewise in industry the absence of the unlimited labour-power at the disposal of a despot necessitated a concentration on the invention and elaboration of tools and weapons that foreshadows the most distinctive feature of European civilization.

I do not of course mean that the Minoans were either democrats or atheists. Chiefs and kings there were, but a study of the plans of a Minoan city such as Gournia, Palaikastro, or Vasiliki, will betray no extreme disparity among the houses. Even at Knossos in the days of his hegemony, frescoes were not restricted to the royal residence. Moreover the Knossian kings, like Minos in Homer, fulfilled priestly functions and the palace was at the same time a temple. But beside the shrines, the lustral basins, and pillar rooms, were cellars stored with jars of oil, industrial workshops, and other signs that practical and mundane things were not outside the purview of the priest-kings. Traces of an overgrown and complicated priesthood such as exercized a fatal sway in Egypt and Babylon there are none. Besides the palaces themselves the only places of worship were rustic mountain shrines and sacred caves.

[1] Spearing *The Childhood of Art*, pp. 230 and 353.

The Minoan religion has much in common with that of Egypt and Mesopotamia, but it was distinct from both and is further important for its wider Mediterranean relations. The deity worshipped under several forms was the Great Mother, sometimes associated with a youthful spouse (Fig. 12). But often the cult was aniconic. The divine being was represented by symbols such as the baetylic pillar, the holy tree, and the double axe—objects which had a sacral significance not only to the east, but throughout the western Mediterranean and in France and Britain. Doves and snakes in association with

FIG. 12. The Great Mother and Horns of Consecration (on the left). From a sealing.

the divine cult again find echoes in Sardinia and Britanny. The sanctity of the bull is even more widely spread. In Crete the use of horns of consecration,[1] Fig. 12, can be traced back to Early Minoan I, and we meet similar objects with the painted pottery of Eastern Galicia, sculptured on the pillars of Sardinian tombs and surmounting Spanish altars. From M.M. I vases in the shape of a bull were used for libations. Tauromorphic vases have a wide easterly range, but in Europe they recur in the Bulgaria, Bukowina, and Spain. Finally the shells of the *Pectunculus*, which have a ritual usage throughout the Mediterranean, were so employed in Crete even in neolithic times, and were imitated in fayence in the temple repositories of Knossos.

[1] (1) fig. 15.

Even more instructive are the Minoan burial rites from the double standpoint of emphasizing the contrast between Crete and Egypt and illustrating western connections. Perry[1] has noted how while in the Egypt of the early dynasties the tombs far excel in magnificence the huts of the living, the relative importance of the two classes of structure was reversed in Crete. Yet Cretan funeral usages have much in common with the Egyptian. As elsewhere in the Mediterranean area, the Minoan tombs were most commonly ossuaries in use by the same family for many generations of successive interments. The bones in these burying places are generally found in the utmost disorder. The dislocated condition of the skeletons in Crete, as in the collective tombs of Sicily, Italy, Portugal, France and other regions where the same phenomena have been observed, has been interpreted by some as evidence of the rite of secondary interment. These suppose that the corpse was left in a temporary resting place till the flesh had decayed from the bones, or even that the flesh was stripped off (*scarnitura*), before the body was finally laid to rest with its forefathers. The careful study of the Messará tombs by Dr. Xanthudides has, however, shown that the dismemberment of the skeletons was due to disturbances by those undertaking the later interments, who displayed a ruthless disregard for the repose of their ancestors in making room for a new occupant. In reality the bodies were originally deposited on the floor of the tomb in the contracted attitude.

The ossuaries might be natural rock-shelters (E.M. I to M.M. I), rectangular chambers built of undressed stones (E.M. II.), or, in the Messará, corbelled chambers shaped like a beehive. The latter type[2] has a peculiar significance for its western relations. The beehive was built of layers of stones, each course projecting inward a little beyond the one below till they met at the top in a false vault (cf. Fig. 19, 1). Entry to the chamber was obtained by means of a narrow door opening onto a sort of walled pit. The actual portal was composed of two monolithic uprights supporting a massive lintel. Small rectangular bone enclosures were often built on to the beehives which apparently stood above ground. The chambers proper

[1] *The Growth of Civilization*, p. 58.
[2] For these see (8).

were very large—the biggest has a diameter of 13 ms.—and often contained many hundreds of corpses. Thus their use lasted over a long period—from Early Minoan I to Middle Minoan I. The corbelled vaults of the early dynasties in Egypt provide an exact replica of the Minoan beehives, even to the accessory chambers built on outside. But the beehive tomb spread on the Iberian Peninsula, South France, Brittany, Ireland, Britain and Holland. A peculiarity common to the Messará tombs and all the collective tombs of the Western Mediterranean, the Altantic area, and even Scandinavia, whether rock-cut chambers, " dolmens," or corbelled beehives, is that great purificatory fires were kindled in them. Though the bones were often scorched by the flames, in Crete at least, there is no trace of cremation.

All three types of ossuary are probably copies of the dwellings of the living—man's oldest shelter the natural cave, the rectangular house of neolithic times, and the nomad's hut or the round house of stone. The existence of round huts in Minoan Crete is attested by the hut models found at Phæstos.[1] Even to-day the Cretan shepherds build round huts of stones and the type was distributed throughout North Africa at an early date.[2]

In Eastern Crete beside collective tombs, separate burials in cists of stone slabs begin in E.M. III[3] and continue into the next period. Franchet[4] has discovered oval and rectangular cists of small stones surmounted by a barrow probably belonging to the same epoch. No bodies were found in them, but the shape of the receptacle has analogues in Sicily, South Italy, and south-east Spain. From Early Minoan III (or perhaps II.) clay coffins in the form of bath-tubs or chests with parallels both among the Egyptians and the Sumerians came into use. The coffins are sometimes buried separately and at others placed in one of the several types of ossuary. From M.M. I to L.M. I clay jars (pithoi) were also used as receptacles for the corpse, a practice that goes back to predynastic times in Egypt and was common on the Greek Mainland and in Spain during the Early Bronze Age. Finally, in Late Minoan I the

[1] (2) fig. 30.
[2] (8) appendix and Evans in Introduction.
[3] (7) p. 13.
[4] *op. cit.*, figs. 13-15.

beehive is revived and at least by the next period rectangular corbelled vaults, rock-hewn chamber-tombs, shaft graves, and pit-caves were all in use simultaneously[1] with clay coffins, baths, or chests.

Tools and weapons will serve both to illustrate the originality of the Minoans and their wide influence in Europe. Stone celts continued to be manufactured throughout the Early Minoan age. A jadeite celt from Kalathiana[2] in the Messará deserves especial mention because such celts were very common in the oldest lake-dwellings of Switzerland, in France, Italy and Central Europe, though the origin of the material remains a mystery. But already in pre-Minoan times copper was being used for celts. Copper ore exists in East Crete and was probably exploited in Early Minoan times.[3] It is generally believed that the Minoans drew largely on the rich resources of Cyprus, though no evidence of connection before Late Minoan times has been adduced. The addition of tin to copper—not of course, to harden it, but to lower the melting point—begins in Crete about M.M. I.[4] But copper remained in use for some time and the standard alloy containing ten per cent. of tin was not firmly established till Middle Minoan III. It is hardly likely that the original discovery of the value of the alloy was due to the Minoans, though the establishment of the standard formula may be their work; for there is no tin in the eastern Mediterranean and the source of Minoan tin remains a mystery. Beads of M.M. III type found in British barrows suggest that the Cornish ores were being tapped by the sixteenth century and in Bohemia Ægean (but not specifically Minoan) objects appear in the nineteenth century, or even earlier. On the other hand, connection with Spain and Etruria,[5] where poor deposits of tin were available, can be traced further back. A dagger of Early Minoan type found with two tin buttons in the ossuary cave of Monte Bradoni in Etruria, is particularly noteworthy.

[1] My account of Minoan burial rites is based on Miss Hall's summary, *U. of Penns. Anthrop. Pubs.*, III, 2, p. 73, supplemented by the authorities cited.

[2] (8) p. 86, pl. xlvi a.

[3] (5) p. 290.

[4] (1) p. 195, the maximum tin content in M.M. I was 9 per cent. and in M.M. II bronzes the minimum is 3.1 per cent.

[5] *infra*, pp. 264 and (5) p. 389.

The flat celt did not, in Crete or in Egypt, lead to the flanged and winged types that characterize the bronze ages of central and western Europe. On the other hand the Minoans had outstripped the dwellers on the Nile; for in Early Minoan times they had learned from the Sumerians to make an axe-head with a hole for insertion of the haft (Fig. 13), while the Egyptians continued to fit the axe-head into the shaft till Roman times. The characteristically Cretan double-axe (Fig, 13, 5) is found in the island as early as Early Minoan II.[1]

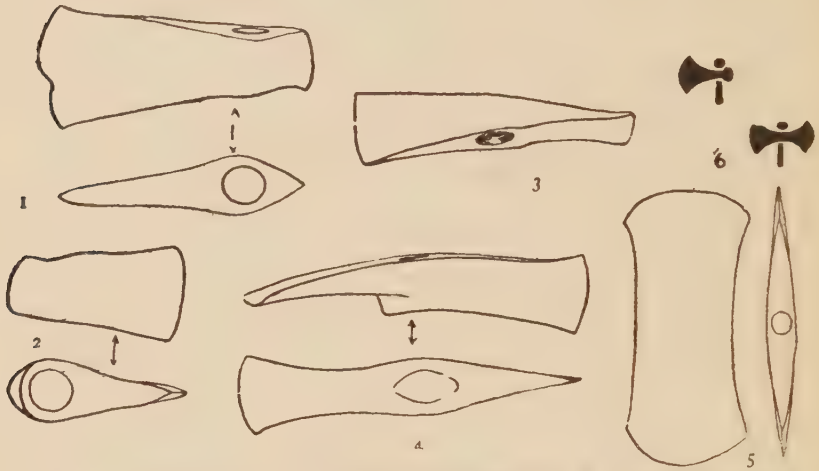


FIG. 13. Minoan axes. 1-5, ($\frac{1}{4}$); 6 (seal impressions), ($\frac{3}{2}$). By permission of the Accademia dei Lincei and Sir Arthur Evans.

It, too, was a Sumerian type, and ousted the single-bladed axe in the Ægean in Middle Minoan III. Most of the earlier Cretan specimens are symbolic. It is likely, too, that this sacred symbol was invested with an exchange value. In France and Germany copper double-axes with a perforation too small to take an actual shaft, seem to mark an early trade route.[2] Finally, from Early Minoan II[3] the Cretans knew a curious implement with one blade parallel and the other at right angles to the shaft, called an "axe-adze" (Fig. 13, 3). The type is best regarded as a combination of two Sumerian axe types. It may have reached Crete from the north, for it has a wide

[1] (1) fig. 70.
[2] *infra*, pp. 251, 258, map IV.
[3] (1) p. 193, note 3.

distribution in South Russia and Transylvania.[1] But by Middle Minoan II the Cretans had evolved a type of their own, (Type B, Fig. 13, 4), peculiar to the Ægean.

The principal metal weapon of the Minoans was the dagger. Even the Early Minoan daggers were fastened to the hilt by rivets, sometimes of silver,[2] and often secured longitudinal rigidity by means of a midrib (Fig. 14). By M.M. I large rivets were in use while by the beginning of the succeeding period a type of dagger with flat shoulders and broad flat tang slightly flanged makes its appearance (Fig. 15, c). The Early

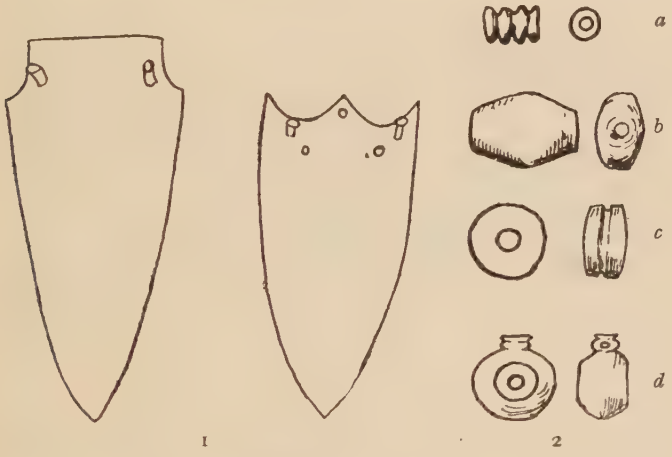


FIG. 14. Early Minoan Daggers, ($\frac{1}{3}$); beads, ($\frac{2}{3}$). After Evans.

Minoan daggers presumably had hilts of wood or bone, and we know that the pommels were spheroid or hemispherical stone knobs perforated to receive the nails which kept them in place.[3] These form the prototypes of the pommels of the later rapiers. Early Minoan dagger types are certainly traceable as far as Upper Italy, but are foreign to the more westerly parts of the Mediterranean.

In Crete itself great advances were made. During Middle Minoan I and II the flat-bladed and the midrib type persisted side by side[4] and led on to the magnificent long rapiers

[1] *infra* pp. 150, 187, and map II.
[2] (8) p. 107.
[3] (8) pl. XXIII, 850-3.
[4] (7) figs. 44-45; Evans, *Tomb of the Double Axes*, fig. 8, (6) pl. XXIV.

illustrated in Fig. 16, from the Shaft Graves of Mycenæ. The pommels, technique, and decoration of the latter shows conclusively that they are of Minoan workmanship. The great Shaft Grave rapiers mark the crowning point of the Minoan armourers' art.[1] They attain a length of 93 cm. and are perfectly tempered. But not only are they remarkable metallurgical achievements, aesthetic genius is displayed in the inlaying of the hilts and in the spiral decoration of the blades (Fig. 16, 3). At the same time these enormous swords vindicate conclusively the supremacy of West over East,

Fig. 15. Middle Minoan I Daggers. After Evans. (¼).

both in technical skill and originality, for nothing to compare with them was ever born in Mesopotamia or Egypt. European civilization is henceforth armed to defend its independence.

Later on in L.M. I*b*, a rapier with horned guards (Fig, 16, 4) was evolved, and in the last Minoan period a short dagger with the flanges carried right round the hilt came into use.[2] But now the creative impulse had passed to Central Europe. The spiral ornament on Hungarian and Scandinavian swords of the Middle Bronze Age indeed shows Minoan inspiration. But here to the North a new weapon was invented, and its appearance intrusively at the end of the Minoan age heralds the collapse of Ægean civilization, to make way for a new type of occidental culture.

[1] I must thank Sir Arthur Evans for allowing me to read a draft proof of the relevant section of volume II of his great work on which these remarks are based.

[2] Evans, *Prehistoric Tombs* (*Archæologia*, LIX), pp. 105ff. fig. 109.

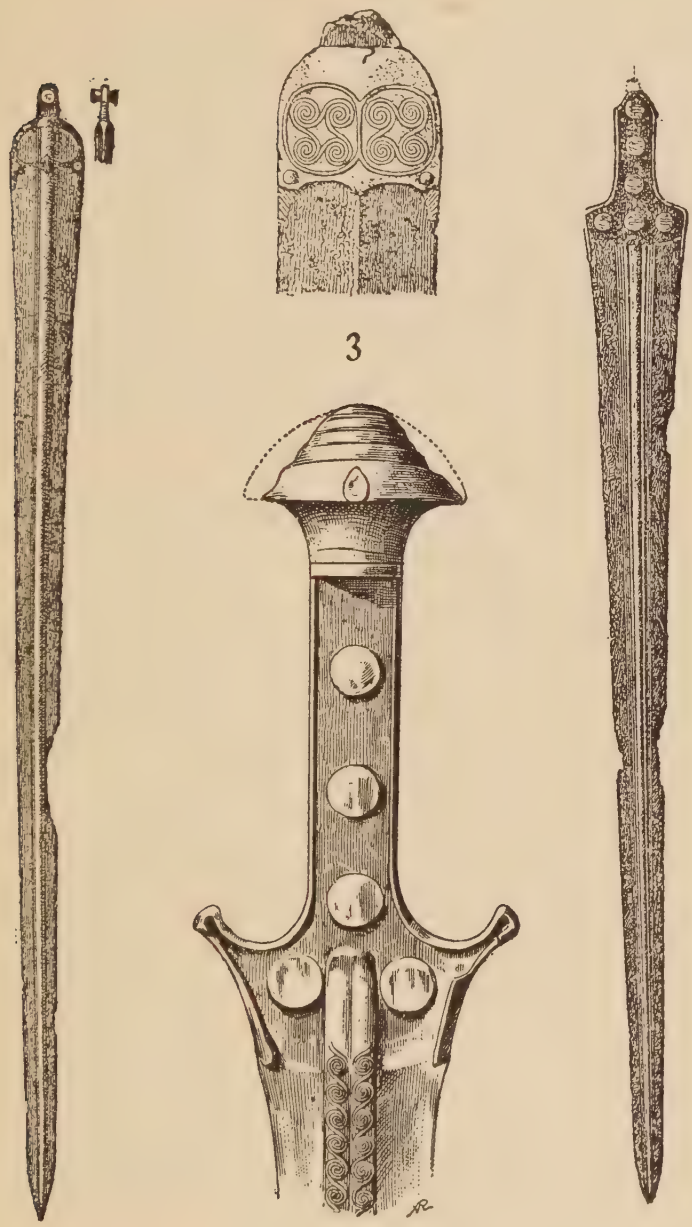


FIG. 16. Minoan Rapiers.

Besides the dagger and the mace the Minoans also used the spear and the bow. The Early Minoan dagger may itself sometimes have been hafted as a spear-head and the two-pronged weapon from H. Onuphrios[1] was certainly so employed. The Minoan socketed spearheads going back to M.M. III were originally formed by bending round into a tubular shaft a flat tang (Fig. 17). Then the socket was cast with the blade. The bow-men sometimes are depicted using arrows with transverse heads. Beautiful obsidian arrowheads are still used in the Late Minoan age.

In connection with the Minoan armoury the narrow flat slips of stone perforated at each end which are common in the beehive tombs of the Messará,[2] deserve notice. They were used

Fig. 17. Middle Minoan Spear-head. (¼).

as whet-stones and find exact parallels in Early Bronze Age graves in Spain and elsewhere. One of these plaques from the tomb of Platanos[3] is perforated at the four corners. It thus exactly resembles the " bracers " found with beakers in graves of the first metal ages in Sardinia, France, Britain, and Central Europe from the Rhine to the Oder. The latter are usually regarded as guards to protect the archer's wrist against the recoil of the bow-string. That explanation will hardly suffice for the Early Minoan specimen ; for Xanthudides states that it shows signs of use for sharpening metal and mentions no arrow-heads.

No description of the rich jewelry or exquisitely engraved seal-stones found in Minoan graves from E.M. I onwards can be given here, but certain bead types that illustrate Minoan commercial enterprise in the western Mediterranean deserve mention. Naturally the Minoans in their intercourse with the barbarians of the west no more used the finer products of their gold-smiths and lapidaries than do modern traders in Africa or the Celebes. But stone beads such as those from the

[1] (1) fig. 72 (E.M. II-III).
[2] e.g. (8) pl. LIV, nos. 2009-2011.
[3] (8) no. 1899, p. 105 and pl. LIV.

early Minoan tomb of H. Onuphrios, especially those of Fig. 14, 2c, have such a notable distribution in South France and Spain that they may well have been the medium of primitive barter. The spool-shaped bead also found in E.M. II graves at Mochlos[1] recurs in the copper age barrow of Maikop on the Kuban (Fig. 61), and was imitated in Sardinia and Portugal. The use of Egyptian fayence in Crete began in Early Minoan times. In M.M. III a local type of segmented bead which in stone was in use as early as E.M. II,[2] was translated into that substance. These segmented beads of blue paste reached South-East Spain and Britain in the Early Bronze Age and have suggested to Sir Arthur Evans the idea of a regular Minoan bead-currency for use in the

Fig. 18. Cups of Napheio type from Egyptian wall-paintings.

Iberic west. Finally the use of fish-vertebræ as necklaces extends all along the Mediterranean coast from Troy and Crete to Spain.[3]

The material of Minoan jewelry reflects the ramifications of the trade illustrated by the distribution of the beads. Silver may have come from the Troad, from Sardinia, or from Spain. For gold we need not go outside the Ægean area. Rock-crystal may come from the slopes of the Alps, but carnelian seems oriental. The "amber" from the Early Minoan tomb of Koumasa is very doubtful.[4] If genuine it may have come from the Baltic across Russia (cf. Map IV). In Late Minoan times a regular traffic in this substance along the Elbe to the Adriatic had begun and is reflected in vases of L.M. I*a* type, imitations of Fig. 18, found in a bronze age context in Saxony.

[1] (7) fig. 25.
[2] *U. of Penns. Anthrop. Pubs.*, III, 3, p. 184; cf. our fig. 14, 2a.
[3] (5) p. 204.
[4] *Tomb of the Double Axes*, p. 44.

Minoan pottery is so rich and varied that prototypes for almost every conceivable vase-form might be found in Crete. The use of paint goes back to Early Minoan I and the wheel was introduced at the beginning of the Middle Minoan age. Cretan ceramics have a special interest as illustrating the influence of stone and metal prototypes both on the form and on the decoration of clay vases. I mention here a carinated bowl of granite because Schuchhardt has wished to see in the Minoan carinated vases descendents of Spanish types.[1] Actually the prototype is Egyptian and belongs to the Fourth Dynasty. In fact Minoan pottery proves conclusively the continuity of Cretan civilization to the confusion of those who look for Nordic or Iberic invaders in the island.

The evolution of Minoan civilization is perfectly self-contained without insular exclusiveness. All who have themselves made a long and personal study of the sites and antiquities of Crete, are so unanimous on this point that the rash generalizations of casual visitors to the Candia Museum may be passed over in silence.

The powerful influence exercised by Crete in the western Mediterranean and to a lesser degree in South Russia during the third millenium B.C., will be better illustrated when we have embraced other parts of the Ægean world in our picture ; for that influence was mediated by maritime trade in which the inhabitants of the Cyclades and the Peloponnese took no small part. To Central Europe Minoan commerce did not penetrate till the sixteenth century, but then it became an inspiration in the bronze age. But coastal intercourse with the west must have been continuous till the downfall of Minoan civilization. In Sicily in particular the Early Bronze Age, Siculan II, is based exclusively on Cretan patterns and may have been due to a Minoan colony.[2]

Principal Authorities

(1) Sir Arthur Evans, *The Palace of Minos at Knossos*, Vol. I. (Oxford, 1921.)

(2) Diedrich Fimmen, *Die kretische-mykenische Kultur*. (*Teubner, Leipzig*, 1921.)

[1] *Alteuropa*, p. 172.
[2] Evans, *Prehistoric Tombs*, p. 109 ; cf. pp. 97-8 below.

(3) Gustave Glotz, *Ægean Civilization*. (Kegan Paul, Trench, Trübner, London, 1925.)

(4) Boyd Hawes, *Gournia*.

(5) Sen. A. Mosso, *The Dawn of Mediterranean Civilization*. (London, 1910.)

(6) British School at Athens, *Palaikastro, Unpublished Objects*, 1922.

(7) R. B. Seager, *Excavations in the Island of Mochlos*. (University of Pennsylvania.)

(8) Xanthudides and Droop, *The Vaulted Tombs of the Messará*. (Liverpool, 1924.) (With a Preface by Evans.)

CHAPTER III

Maritime Civilization in the Cyclades

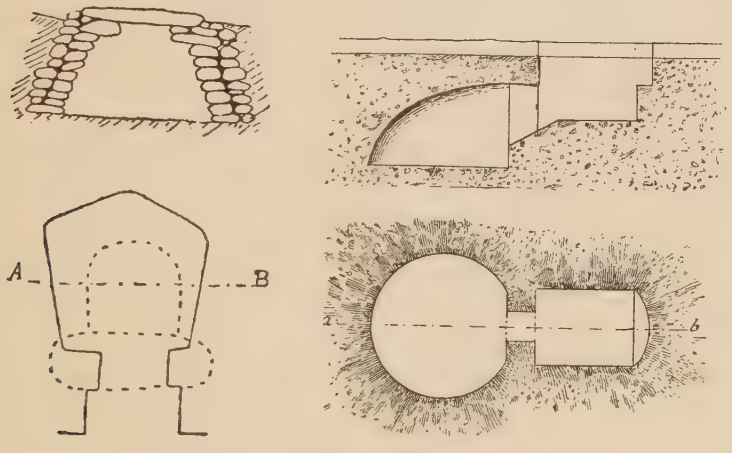
The active part played by the inhabitants of the islands of the Ægean Sea in the maritime enterprises of the third millennium referred to in the last chapter is demonstrated by the wide diffusion of their wares. Objects of specifically Cycladic type are found in South Russia, Bulgaria, Egypt,[1] and in the western Mediterranean as far afield as Sardinia, the Balearic Isles and South France. Conversely Asiatic, Thessalian, Minoan, and Egyptian influence is traceable in the civilization of the islanders. The islands are favourably situated with respect to Anatolia, the Greek Mainland and Crete and moreover possess natural resources. The obsidian of Melos, the marble of Paros, and some other islands, the emery of Naxos, were all used far and wide at an early date. In Paros and Siphnos there is also copper ore.[2] Though (?) Melian obsidian was found in the neolithic levels of Crete and Naxian emery was employed by the predynastic Egyptians, no remains of neolithic man have been found on the islands. But in Early Minoan times the Cyclades, Cythera, and Eubœa were thickly populated.

Whence the inhabitants came is uncertain. The brachycephalism of the only skull[3] that has been examined, and the Cycladic burial rites seem Anatolian rather than Cretan or North African. On the other hand the grave furniture exhibits a strong Egyptian influence. The culture which these mysterious settlers created is divisible into three main periods —Early, Middle and Late Cycladic—parallel to the three principal divisions of the Minoan age. Further subdivisions such as we use for Crete, are as yet only practicable in the case of Melos. For the Early Cycladic period which is by far the

[1] A bowl of Parian marble in a tomb of Dynasty I, Frankfort, p. 112.
[2] (1) pp. 190f.
[3] Index 80.9 from Antiparos, *J.H.S.*, v, p. 59.

most important, the evidence is derived almost entirely from graves.

The form of the tomb shows much variety. In Thera, Amorgos, Naxos, Paros, Antiparos, and Siphnos, and at Pelos in Melos, the dead were buried in irregular quadrangular —not rectangular—cists of stone slabs, designed to contain a single corpse save in the case of a few double cists on Amorgos. In Syros the prevailing type was a small corbelled chamber (Fig. 19, 1), while in Eubœa a chamber-tomb, entered by a stepped pit, was excavated in the rock[1] (Fig. 19, 2). The



1 2

FIG. 19. Cycladic Tombs. 1, Syros; 2, Eubœa.

chamber-tombs and beehives as much as the cists usually contained but a single body lying contracted on the left side. However, in the poorer cemeteries the remains of several skeletons were crammed into the same cist.[2]

The graves with multiple interments yielded no metal and only rough mud-coloured pots (Fig. 24, 1). But it would be premature to conclude that they are the oldest; for the rich cemeteries of Amorgos, Paros and Naxos produced similar fabrics and tomb 142 on Siphnos contained many corpses, but a Trojan mug and a degenerate dove-pendant. Still this sort

[1] Fimmen, *op. cit.*, p. 57, Chamber-tombs, beehives and shaft graves were all in use on Melos between E.C.III and L.C.III (3), p. 236.

[2] e.g., one cemetery on Antiparos (*J.H.S.*, V, p. 48) and at Pelos (5) p. 40.

of pottery antedates the first city at Phylakopi in Melos, and may therefore be called Early Cycladic I-II. On the same evidence the fine dark-faced wares decorated with furrowed or stamped designs including spirals and (later) concentric circles (Fig. 23), and the contemporary fabrics covered all over with a lustrous black paint and adorned with geometrical patterns in the same medium are classed as E.C. III. They belong to the older phase of Phylakopi I and recur in the tombs of Syros, Naxos, and Siphnos. Finally the matt painted ware which begins in the last phase of the first city at Phylakopi and continues into the lower levels of the second alongside of imported M.M. II vases, belongs to M.C. I-II. Some characteristic Cycladic shapes are shown in Fig. 24.

Apart from the varieties of the pottery due as much to local as to chronological differences, the furniture of the Cycladic tombs shows many common features. Generally characteristic are the marble vases, palettes, and figurines, a relative wealth of silver ornaments and stone beads, and toilet articles such as tweezers and cutters (Fig. 21, 2). The marble vases are most common in graves of the older groups, in Paros, Amorgos and Antiparos, while in the chamber tombs of Syros and Eubœa they are rare. The shapes are mostly the same as those of the older clay vases. Occasional theriomorphs in marble indicate Anatolian connection.[1] On the other hand the islanders like the Ancient Egyptians, gave to the departed palettes that they might paint their faces in the next world. In the Cyclades the palettes are of marble, hollowed on one side and perforated at the four corners. Some smaller flat plaques of schist similarly perforated from Amorgos and Paros[2] have been compared to the Continental bracers. But no arrow-heads went with them and so we must remain as sceptical of that interpretation as in the case of the similarly shaped whet-stone from Crete. The famous clay "frying pans" (Fig. 23) may have really been palettes.

Besides vessels containing food and unguents, the dead man was regularly provided with his ornaments—beads, rings, diadems, and pins. A series of beads from Paros is shown in Fig. 20. The phallic bead (Fig. 20, 3) is the prototype of a series diffused from South France to the Baltic and the Don

[1] Frankfort, p. 112 and pl. IX, 4.
[2] (1) fig. 6; (5) p. 67 and pl. V. 4.

(Map III). The studs also have parallels in Scandinavia and Britain, while the stone dove-pendants are identical with some from E.M. II-III tombs in East Crete,[1] and show the extension to the Cyclades of the Minoan cult. None of the Cycladic beads are specifically Egyptian, and the phallic type is unknown in the Nile Valley. Another ornament, the bone tube like Fig. 20, 1, is found in Sardinia and on the Atlantic coast. Copper, silver, or in one case rich bronze was used for the

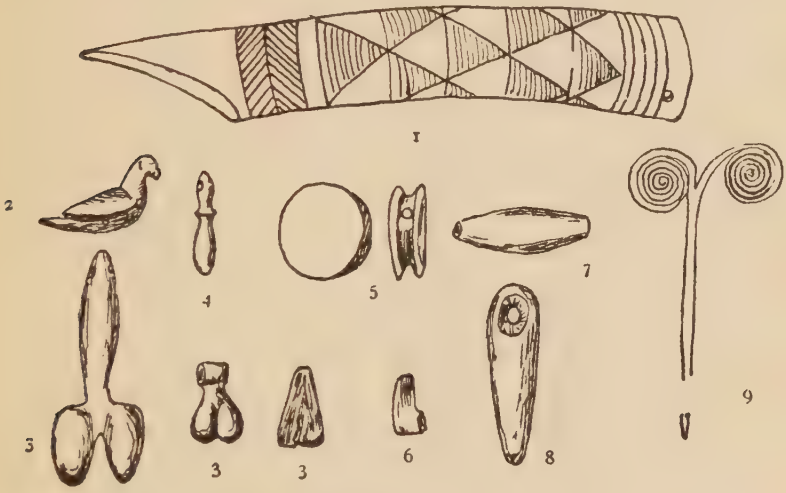


FIG. 20. Early Cycladic Ornaments; 2-8, Paros; 1 and 9, Syros. (⅔).

rings,[2] bracelets, diadems, and pins. The diadems find exact parallels in the Early Minoan graves of Mochlos, save that gold was there used instead of silver. The similarity is unusually clear in the case of the silver diadem found, not in a grave, but on the acropolis of Chalandriani in Syros. The pins with spiral heads belong to a Trojan type, but have relatives as far away as Anau in Turkestan,[3] and as late as the *terramare* of Italy.

The toilet implements of copper or silver are common in all the islands and Crete. The tweezers (Fig. 21, 2) go back to a predynastic pattern. Weapons have only been found in the

[1] Seager, *Mochlos*, fig. 20, IV, 7.
[2] (1) pl. VIII, 2.
[3] *Pumpelly*, figs. 251-2 (culture III).

graves of Amorgos and Eubœa. The former site yielded a series of daggers with marked midribs and sometimes, as in Early Minoan Crete and Spain, with silver rivets. The Cypriote blade of Fig. 22, 1, is precisely dated by the idol found with it to E.C. III. Spear-heads fastened to the shaft by thongs passing through two slits were also in use (Fig. 21, 1) From a tomb apart from the rest and dated by a wheel-made matt-painted vase to M.C. II, or later, Montelius identified a halberd (Fig. 21, 3).[1] No arrows and only one flat celt

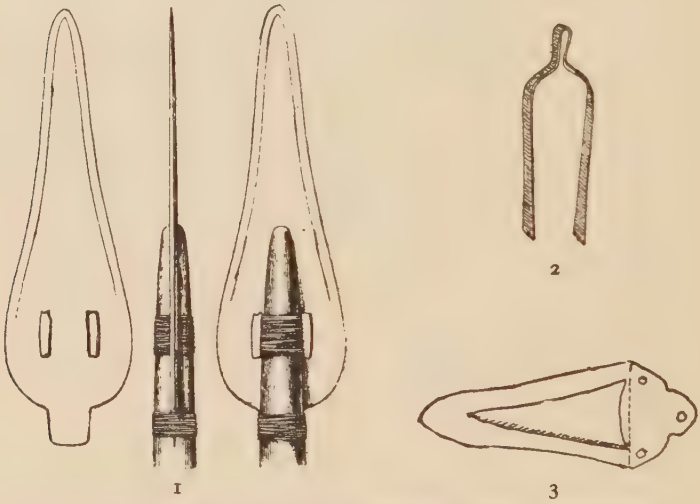


FIG. 21. Cycladic Spear-heads (showing method of shafting), Tweezers and Halberd. Amorgos. (⅓).

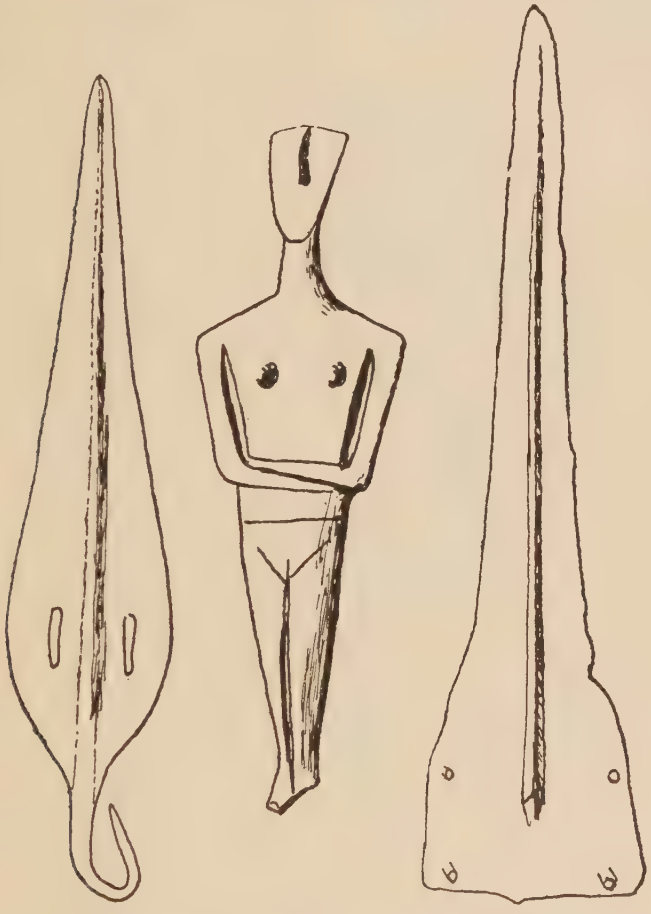
has been found in a grave, but celts, sometimes perforated for suspension, have been found stray in several islands and axes and axe-adzes are also known.[2] The quadrangular "awls" sharpened at both ends, found in the chamber tombs of Syros, as in Early Minoan Crete, may here have been used as needles for tattooing. They illustrate a type common to the whole of Europe from Spain and Britain to the Volga at the dawn of the ages of metals.

An analysis of one dagger from Amorgos revealed no trace of tin, but a ring from the same island contained 13.5 per

[1] *M.S.A.N.*, 1896, pp. 30ff., figs. 10-11.
[2] *B.M.G., Bronze*, fig. 174.

cent. of that metal.[1] Beside silver and tin, the Early Cycladic people also imported lead.

The most characteristic and famous monuments of Early Cycladic piety are the well-known marble idols. Since they



1 2 3

FIG. 22. Tomb Group. Amorgos. ($\frac{1}{3}$).

are often found in the graves they may represent the great mother in her funerary aspect of intercessor as in Sumer. But they are not all female, though that sex is in the immense

[1] (1) p. 187; cf. p. 190.

majority. There are two types. The fiddle-shaped variety, (Fig. 10, 10 above), might be thought the older for it alone occurs in the poorer of the two cemeteries on Antiparos. Still the same shape is found in Naxos, Paros, and Siphnos, and in the chamber tombs of Syros. Sir Arthur Evans shows in Fig. 10 how it may be derived from the squatting figurines of

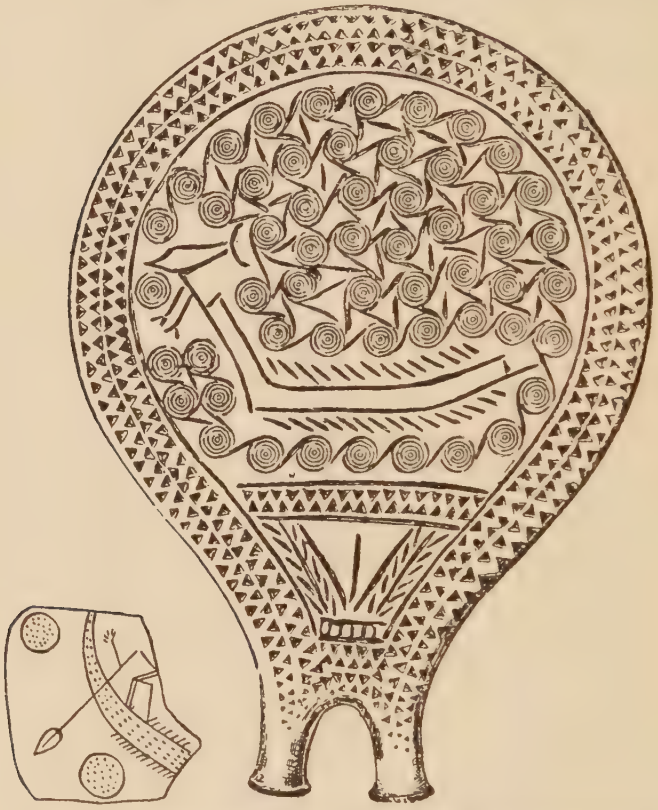


FIG. 23. Cycladic Sherd and " frying-pan " depicting boats.

neolithic Knossos. The finer type (Fig. 22) may be of Sumerian descent and is the commonest in the rich tombs of Antiparos and in Amorgos.[1] These fine idols found their way as far as Philippopolis in Bulgaria and the Mainland of Greece and are common in the beehives of the Messará in Early Minoan III.

[1] For Eubœa, see (6) fig. 2.

Save at Phylakopi there are few architectural remains to supplement this picture of Early Cycladic civilization. At Phylakopi the first city belongs to the close of the epoch. The houses were already agglommerations of rectangular rooms with stone foundations for the walls. Children were often buried in jars under the floors.[1] Below these foundations, sherds in the style of the Pelos cemetery mark the existence of an older settlement whose unsubstantial huts have disappeared. In Amorgos the houses were not all rectangular. Phylakopi I was unfortified. The acropolis of Chalandriani on Syros was however girt with a double line of wall. The inner wall was strengthened by towers at frequent intervals. The narrow gates were so placed that anyone entering the outer circuit must pass under a length of the inner wall before reaching the gate of the citadel. But if our knowledge of the houses of the islanders is fragmentary, they have left us good pictures of their ships incised on their vases (Fig. 23). They are high-prowed like the Minoan, but not the least like Egyptian vessels.[2]

The civilization which has just been described is no mere copy of that of Crete. We can indeed trace the same forces at work in its genesis as had inspired the Minoan culture. Subsequently relations with the Great Island, especially with Mochlos, were sufficiently intimate and constant to fertilize the industry of the islanders and to prove the parallelism of the developments in time. But the Cyclades were in no sense dependencies of Crete. Indeed in E.M. III the influx of numerous idols and vase forms of Cycladic type and the introduction of the spiral motive shows that the little islands of the north were influencing the big one in the south.[3] At the same time while in contact with Egypt and indebted to her as the tweezers, palettes and other articles of funeral furniture show, the islanders retained their individuality even in the religious sphere where the Egyptians specialized. Thus the wide distribution of Cycladic as distinct from Egyptian or Minoan beads or amulets not only to the north, but right to the Atlantic coast has a special significance. We must indeed picture in the Ægean a confederacy of maritime states whose

[1] (5) p. 50.' As at Anau!
[2] Cf. Frankfort, p. 140 and fig. 15, de Morgan, fig. 123.
[3] Evans, *Palace*, p. 112.

citizens undertook long voyages for trade. One result of this traffic must be the Cycladic silver, lead and tin, and the distribution of phallic beads must be its reflex. The Melians also possessed a commodity much prized by early man, obsidian, but the latest studies of the obsidian from neolithic levels in South Italy and Sicily tend to discount the importance assigned to this special trade by earlier investigators.[1]

To the north a powerful neighbour profoundly affected the activities of the confederacy. On the shores of the Hellespont a vigorous civilization of Continental affinities had arisen at Troy. Its influence on the Cyclades was comparable to that of Crete. Thence came the silver and some vases found on Syros and Siphnos.[2] On Eubœa two groups of tombs contained exclusively Trojan vases[3]—cups and jugs of the types of Fig. 26, 3-4—and the only dagger from the early cemeteries there, is of Trojan type. Indeed, on the Euripos as on the Hellespont we must recognize an Anatolian colony taking its toll on the traffic of the straits. West of the Ægean the Helladic peoples of Greece also joined in the maritime exploits of the islanders, and even the Continental culture of Thessaly was not in one-sided dependance on that of the sea-folk. The latter for instance learned the spiral motive and perhaps the art of fortification from the " neolithic " inhabitants of Dimini.

Early Cycladic culture survived into the First Middle Minoan period. Then it seems to have decayed. Only a few tombs on the more northerly islands, Eubœa, Naxos, and Syros,[4] can be definitely dated by the occurrence of Minyan or matt-painted ware to M.C. II or later. On the Mainland the intrusive Minyan culture of Orchomenos III had dislocated trade. At sea the thalassocracy of Minos superseded the free confederacy. Melos and Thera still flourished, but as Minoan dependencies.

Phylakopi I was destroyed and on its ruins a new city arose with regular streets and protected by a wall. Imported M.M. II vases, found with native matt-painted ware and Minyan imported from Greece, prove the strength of Cretan influence. To a later phase of the same city belongs a building

[1] So Edgar in (3), cf. p. 87 *infra*.
[2] (2) pl. IX, 11 and p. 122.
[3] (6) pls. H. and Θ.
[4] (6) pl. H. 5, (2) pl. IX, 27.

with pillar rooms as in a Cretan palace and decorated with a frescoe of flying fishes in Middle Minoan III technique. The naturalistic motives current in Crete in M.M. III and

FIG. 24. Cycladic Pottery. 1, E.C. I-II; 2, E.C. III; 3, L.C. I.

L.M. I*a* were successfully imitated in the local matt-painted technique (Fig. 24, 3). It is true that the continuity in both architecture and pottery between the first and second cities precludes the idea of a complete change in the population;

but Phylakopi may have been the seat of a Minoan governor. The Cretans were still using obsidian and so would want to control the supply. In the Late Cycladic period as bronze ousted the volcanic glass, the importance of Phylakopi waned. However the city was rebuilt, the wall strengthened by a lateral bastion flanking the gate, as at Troy, and a palace of the Continental megaron type was erected. Numerous Mycenean sherds testify to the occupation of most of the islands in the L.M. III. But the real interest of the Cyclades lies in the Early Cycladic epoch. Then the islanders were original and creative and propagated their culture far and wide. Later the islands only dimly reflect the splendours of Minoan civilization.

AUTHORITIES (all illustrated).

(1) Tsountas, Κυκλαδικά in Ἐφ. Ἀρχ., 1898. (Amorgos & Paros.)

(2) *Ib.*, Κυκλαδικά in Ἐφ. Ἀρχ., 1899. (Syros & Siphnos.)

(3) *The Excavations at Phylakopi in Melos.* (Society for the Promotion of Hellenic Studies, 1904.)

(4) *Supplementary Excavations* at *Phylakopi* in *B.S.A.*, xvii., pp. 1 ff.

(5) Bosanquet, in *B.S.A.*, III., pp. 52 ff.

(6) Papavasileios, Περὶ τῶν ἐν Εὐβοίᾳ ἀρχαίων τάφων. (Athens, 1912.)

CHAPTER IV

The Anatolian Civilization of Troy

The Early Cycladic culture has already directed attention to the storied shores of the Hellespont. Situated on the Asiatic coast, Troy, or to use its modern name, Hissarlik, commands both the sea-way between the Black Sea and the Ægean and one land route from western Asia Minor to Europe. And in its hinterland lie extensive silver deposits which show signs of exploitation in antiquity. The bulk of the ruins is in itself sufficient to show the importance of the site at an early date, and the rich material found by the late Dr. Schliemann proves the influence that Troy exercised in prehistoric Europe. Unhappily the uncertainty which reigns as to the exact stratigraphical position of many of the objects, considerably reduces their scientific value. There were no less than nine superimposed settlements on the hill of Hissarlik. Of these the sixth from the bottom is Mycenean and we are principally concerned with the older five.

The first settlement was an unpretentious village, but the house walls had already stone foundations and were rectilinear. So little is certain about its contents that we can scarcely say whether its occupants were European or Asiatic. The pottery was hand-made, slipped and polished. It owes its black colour to the carbonaceous matter in the clay. Occasionally it was ornamented with simple linear designs in thin white paint. Globular pots with lugs pierced for string holes and lids have E.M. I parallels in Crete and a high-footed bowl that technically at least belongs to this settlement is a good Danubian II type.[1] If we may judge from the vases of Yortan in Mysia,[2] long-necked jugs which seem to copy leather forms were already in use. Stone celts were common and some perforated axes may belong

[1] (2) fig. 50, Schmidt doubts its date (3) 233.

[2] B.M. *Catalogue of Vases*, I, 1, A1-67, Dussaud, fig. 99. They are connected to Troy I, by the use of white paint and the carboniferous paste.

to the oldest city, but that is uncertain[1] and the types are not identifiable. The earliest Trojans were probably without metal. They kept cattle, sheep, pigs, and goats and engaged in fishing. Troy I may represent just an extension of a considerable Anatolian culture represented also on the Bosphorus,[2] at Yortan in Mysia, Boz Euyuk in Phrygia, and with possible ramifications as far south as Pisidia,[3] and which

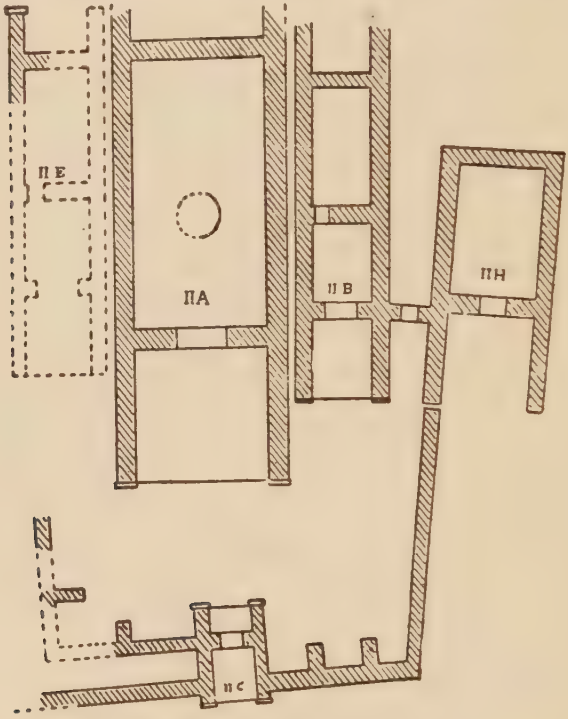


FIG. 25. Megara, Troy II.

was akin to the Cretan neolithic and indebted to Mesopotamia. In any case the " neolithic " village endured for some time since two structural periods can be distinguished.

Then Troy I gave place to a real city girt with stout walls of stone, 8½ m. high, and surmounted by a brick rampart.

[1] The technical criterion proposed by Götze (1), p. 322, is incompatible with the results of Evans' study of the Cretan mace-heads ; cf. *Man*, XXIV, 51.

[2] *Fv.*, 1922, pp. 112ff.

[3] *B.S.A.*, XVIII, p. 80ff.

The walls show false buttresses at intervals as in Mesopotamia and are entered by straight gates protected by projecting towers. The central building was a hall of the megaron type with porch and central hearth, Fig. 25. This is not an Ægean house type[1] though it was known on the neolithic acropoleis of Dimini and Sesklo in Thessaly and in Late Minoan days was universally adopted for the palaces not only on the mainland but even in Melos and in Crete (at Phæstos). On

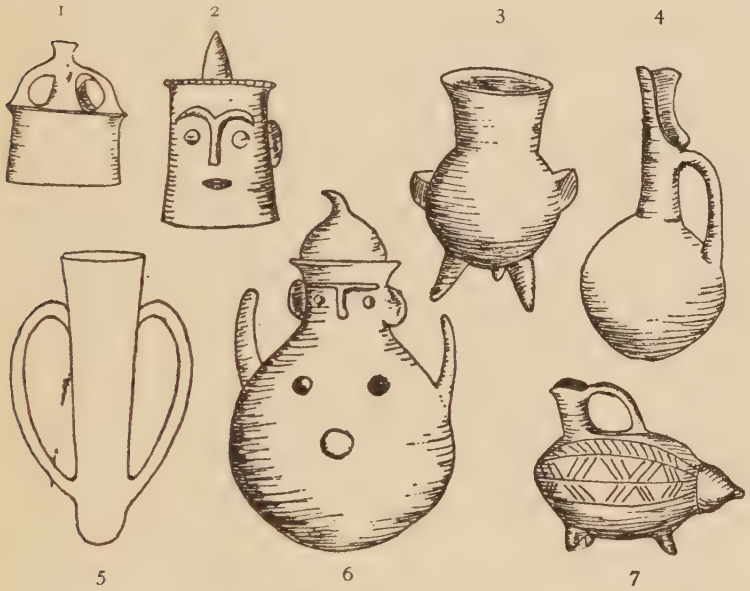


FIG. 26. Pottery, Troy II. (⅛).

the other hand it has very ancient parallels in Transylvania and Bavaria. The second city of Troy was occupied for several centuries in the course of which the walls and other buildings were twice rebuilt. We have thus three periods for Troy II.

Pottery is very plentiful. The oldest ware was hand-made, but in the second structural period the potters' wheel and oven were introduced. From the first the potter seems to have aimed at producing a red ware by oxidizing the iron in the clay, but before the end of the second city fashion began

[1] But cf. Mackenzie, *B.S.A.*, XIV.

to veer back to a dark-faced fabric. This time, however, the colour was not produced by smoking the clay, but by reducing the iron oxide in it. The typical red-ware, as Myres has shown,[1] is proper to an important group in North Syria and Cyprus with which Pisidia now provides an intermediate link. And many Trojan forms, the beak-spouted jugs, the askoi, the three-footed flask and the " face-urns " (Fig. 26, 2 and 6), are just specializations of Syrian and Cypriote shapes. But they go still further. Face-urns recur in southern Italy and on the Danube at Vinča and Tordos, and carry on the tradition of the funerary vases recently found in Sumerian graves at Kish.

Another group of vases such as the high-handled cups with a wide distribution in Thessaly and Central Europe, are shown by the beakers of Treasure A to be based on metallic forms. Finally a series, best represented by cylindrical unguent-boxes and kernoi, belongs to the circle of Ægean-Cycladic culture. The freak vases with two necks deserve mention for Hungarian and Cypriote parallels. Ornament is rare in the ceramics of Troy II. In local fabrics it is almost restricted to very simple incised bands, but plastic spirals[2] which may have Danubian connections, do occur. In the contemporary pottery of Yortan plastic ornament is not uncommon. The bowls painted in red may like the primitive lustre ware, be imports from the Cyclades.

But the lords of Troy used also vessels of silver and gold.[3] In addition to beakers and flasks of precious metal, Treasure A contained a small globular bottle and a sort of " sauce-boat " with a spout at either end of gold. The cupping by which a ring-foot is provided for the beakers (Fig. 27, 5) is an old Sumerian plan and illustrates the genesis of one type of clay ring base.

Apart from vases the metal types illustrated at Troy II are very remarkable. The best series comes from Treasure A, belonging to the third period. An analysis of the flat celts shows that at this time the Trojans were using standard bronze

[1] *J.R.A.I.*, XXXIII, pp. 374ff.
[2] e.g. (3) 832.
[3] Note that the handles of the gold and silver vessels are not ribbon-like and are attached by solder, not riveted as in Crete or Early Helladic Greece, cf. *J.H.S.*, XLIV, p. 163.

containing ten per cent. of tin.[1] In view of the early Trojan types found in the Danube valley it is reasonable to suppose that the tin came from Bohemia. The typical Trojan dagger or spear-head is shown in Fig. 27, 2-4. They have been compared by Evans to Middle Minoan Ia types, but with them was a Cypriote blade identical with the specimen found in an E.C. III grave on Amorgos (Fig. 22, 1). In any case the Trojan type is Oriental, i.e. Sumerian,[2] not Minoan. Beside

FIG. 27. Troy II. From Treasure A, Nos. 2-4 (⅓) and 5-6 (½). No. 1 stray (½). By permission of the Museum für Völkerkunde, Berlin.

the dated implements from the treasures the Schliemann collection contains an axe-adze (Fig. 28, 4), resembling, but not derived from, the Hungarian type C,[3] the ubiquitous quadrangular awls, flame-shaped razors and knives (Fig. 27, 1),

[1] (1) p. 421.
[2] e.g., Cros, *Nouvelles Fouilles de Tello*, figs. 110-112. Andrae, *Die archäischen Ischtartempel*, pl. 60.
[3] cf. *P. Z.*, IV, pp. 24f.

and a concave chisel of Mesopotamian type.[1] The exact context of all these objects is uncertain.

But though Troy II belongs to the bronze age many stone celts and axes, and knives, razors and sickle (or saw)-teeth of flint and obsidian[2] were collected from its ruins. Perforated hammer-axes are numerous. Some[3] belong to specific Central

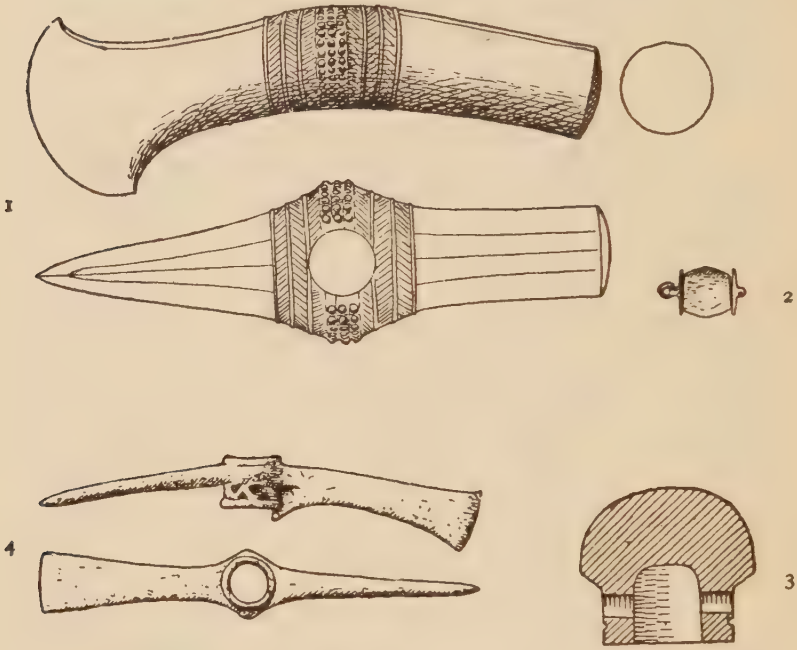


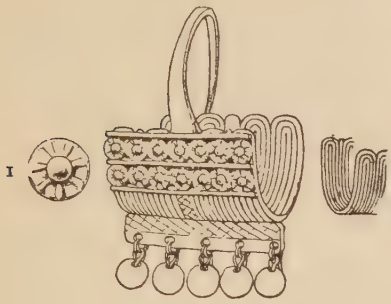
Fig. 28. Troy II. From Treasure L, Nos. 1 (⅓), 2 (½), and 3 (⅓). No. 4, stray (⅓). By permission of the Museum für Völkerkunde, Berlin.

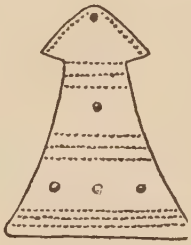
European types, others with a pick-like butt recall a copper axe from Veremye on the Dniepr. The finest weapons of stone are the magnificently polished and decorated greenstone axes from Treasure L (Fig. 28, 1). The shafts which held them were surmounted by crystal knobs like Fig. 28, 3. They must have been emblems of sovereignty. A very close parallel can

[1] (3) 6232; cf. Fig. 62, below.

[2] Mr. Casson tells me that three varieties of obsidian occur. Perhaps Melian, Hungarian, and Caucasian.

[3] e.g., the Marschwitz type (3), 7226; cf. *Man.*, XXIV, 51.





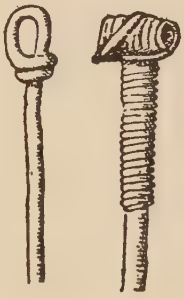


FIG. 29. Troy II. Nos. 1-2, Treasure A ($\frac{1}{1}$); 3, D; 4, F; and 5, stray ($\frac{1}{1}$). By permission of the Museum für Völkerkunde, Berlin.

be quoted from the treasure of Borodino in Roumania.[1] Elsewhere in the Ægean stone hammer-axes are very rare and are not older than the later part of the Late Minoan age. Yet the splendid axes from our Treasure L can hardly belong to the miserable squatters of Troy III or IV, and should antedate cities V-VI. Horn axes were also used by the Trojans. As in the bronze age axes of Bohemia and Switzerland, they always have a rectangular shaft-hole.

The jewelry richly represented in the several treasures is as instructive as the metal implements. The goldwork of the diadems, pectorals, and earrings from Treasure A challenges comparison with that of the Mochlos tombs. The technique is indeed superior, but it lacks the Minoan taste and delicacy. The pointillé ornament of the gold plaques has characterized also the early gold work of the Danube (Fig. 29, 2). The great basket-shaped earrings of Fig. 29, 1, composed of four bands of recoiled gold wire soldered onto an ornamented gold plate and set off with pendant discs, find an echo in simpler earrings from British round barrows. The recoiled loops of gold wire which make up the baskets became the models for the earrings of the Bohemian Aunjetitz period. Gold ribbon spirals with canoe-shaped ends from the same treasure[2] were also adapted in Hungary and Central Europe. Again the spiral type from Treasure F[3] stands mid-way between the simple wire curls found in E.M. II graves of Crete[4] and copper age barrows on the Kuban and a well-known type with flattened ends characteristic of the Early Bronze Age in Central Europe and South Russia.

The pins from Troy too connect on with European types. The double spirals of those from Treasure D (Fig. 29, 3) recall the Early Cycladic type mentioned above. The knot-headed pins, Fig. 29, 5, are even more important, but their stratigraphical position is not recorded. The type goes back to predynastic times in Egypt, reappears in Cyprus, and spreads through the Danube valley just at the beginning of the bronze age there.

Besides gold and silver, rock-crystal, lapis lazuli, carnelian and ivory[5] contributed to the splendour of the Trojans. Among

[1] Åberg, *Nordic*, fig. 213.
[2] (2) Figs. 699 and 703.
[3] (2) Fig. 880.
[4] *U. of Penns, Anthrop. Pubs.*, III, 3, p. 184, fig. 107.
[5] Much of Schliemann's ivory however turns out to be polished bone.

minor ornaments bone tubes ornamented with bosses,[1] like the typical Trojan buttons, reached Sicily. Bone tubes like the Cycladic specimen illustrated in Fig. 20, 1, and strips of bone[2] (of uncertain context) ornamented with concentrical circles like Fig. 51, 2 from Sardinia, again indicate western enterprise. On the other hand, a ring-pendant of stone[3] points to relations with Thessaly and the Baltic. Some amber beads[4] supposed to have been found in Treasure L might have the same significance but that their actual Trojan provenance is questionable. The clay whorls decorated with script-like signs may really have been the beads of the plebs (cf. Fig. 84a, below).

Many flat marble idols (Fig. 10, 13-15) show that the Trojans worshipped the same mother goddess who was honoured in the Cyclades and other likenesses of the same deity were made in lead. On the other hand, stone phalloi from both Troy and Boz Euyuk[5] are symbols of an Anatolian cult strange to the Mediterranean, though the symbol in clay spread to Bulgaria and even reappears in the Early Minoan beehive of Platanos.[6]

In view of its European connections it is to be regretted that the date of Troy II is so debatable. The traditional chronology places it between 2400 and 1900 or 1800 B.C. The occurrence in the city of E.C. III daggers, primitive lustre ware, and clay seals resembling E.M. III types on the one hand,[7] and the Trojan vases of Early Cycladic tombs and the contemporary settlement of Orchomenos II on the other, go far to confirm this view.

Troy II must be regarded not as an isolated phenomenon, but as the richest and most prosperous representative of a culture common to the whole of western Asia Minor ; for at this period the ceramic evidence supplemented by metal and other types speaks unambiguously for the fundamental community of culture between Troy and the sites on the Bosphorus, in Phrygia, and Mysia, and Pisidia mentioned

[1] (3) 7953 ; cf. fig. 46 below.
[2] (2) Fig. 540.
[3] (2) Fig. 557 ; cf. fig. 75 below.
[4] (3) 6117-8.
[5] (3) 7650, A.M., XXIV, pp. 6f.
[6] Xanthudides, *op. cit.*, pl. XXIX, 4300.
[7] Schuchhardt, *Alteuropa*, p. 213.

above (Map II). The sudden influx of red ware at the beginning of Troy II suggests very clearly the inspiration of Cyprus and North Syria. Myres' brilliant forecast of 1898[1] that the southern influence came to Troy overland, finds striking confirmation in the conjunction of red-ware jugs of Trojan type and Cypriote daggers in the site explored by Ormerod on the Upper Meander[2] (Map IV). This current from the south-east undoubtedly inspired the first metal age of Troy. Later we must ask whether it did not cross the Hellespont and reach Serbia. But Cycladic elements are also visible. They may be explained, however, as due to trade relations acting on a similar ethnic substratum.

The crux of the problem of Trojan origins lies in the Nordic element. Schuchhardt relies chiefly on the megaron house, Åberg on the stone battle-axes to prove the presence of Nordics. Now the megaron house is not Nordic in the sense of Schuchhardt. It is rather Danubian or Ukrainian and may in the end turn out to be Anatolian. The battle-axe is however a distinctively Nordic weapon. We may not indeed agree with Åberg in deriving the Trojan weapons via Scandinavia from a British bronze age type but prefer to seek the prototypes in copper on the Kuban, but even so the axes remain Nordic. Now Peake, who derives the Nordics from South Russia, regards them as the destroyers, not the rulers, of Troy II.[3] Could the battle-axes be referred to Troy III-IV, his theory would work very well. But although the absence of such weapons from stations like Yortan and from Eubœa which seem contemporary with and allied to the second city at Hissarlik, is peculiar, the specimens from Treasure L can hardly be put so late. Troy II had trade relations both with South Russia and Central Europe and perhaps this intercourse will suffice to explain the axes.

Whoever were its authors, the civilization of Troy II had a wide and profound influence. The wealth of the city is due to its command over the Pontic-Ægean trade and confirms the inference based on the occurrence of Early Cycladic types in South Russia as to the early traffic along the route. But the lords of Hissarlik did not stand in a simply predatory relation

[1] *J.R.A.I.*, XXVII, p. 176.
[2] *B.S.A.*, XVIII, p. 91, fig. 9.
[3] *J.R.A.I.*, XLI, pp. 154ff.

to Early Ægean maritime commerce. The extension of Trojan types such as the bossed bone plaques and buttons or pommels of the type of Fig. 28, 3, to Sicily and even Portugal may well mean that Troy too was a member of our Ægean maritime confederacy. But the civilizing influences radiating from Troy also extended to the opposing mainland. Apart from the Anatolian settlement on Eubœa mentioned above and the many ceramic parallels between Troy and Thessaly III described below, Trojan forms in clay and metal extend far up the Danube. High handled cups and spectacle spirals of Trojan type are regularly associated with the Danubian II civilization. A little later the diffusion of Cypriote daggers (Map IV) and knot-headed pins which heralds the dawn of the Danubian bronze age, must have been mediated by Troy, since they are accompanied by the earrings of Troadic type. Thus the original impulse which created the European bronze age must have come from this side.

Troy's great days as a civilizing factor closed with the beginning of the second millennium B.C. The city was sacked and razed to the ground. Later some survivors settled under the shelter of the ruined walls and built two miserable villages, Troy III and IV. Of the contents of these settlements, despite a deep deposit, nothing certain is known. The pottery of Troy V carries on the dark-faced deoxidized tradition of the last phase of the second city. Of the two alleged bracers found at Hissarlik one at least belongs to this epoch.[1] The wares of Troy V resemble Minyan, but it is questionable whether the true Minyan forms antedate its successor. The latter, the Homeric Troy, is probably only the expansion of Troy V. Its massive fortifications embracing a much larger area than that of the second city, testify to the renewed importance of the hill of Hissarlik when the Minoan and Mycenean empires had reopened trade with the Euxine. But despite survivals of native tradition both in ceramics and metallurgy, the civilization now revealed is essentially borrowed from the Minoan. Imported sherds of L.M.Ib vases,[2] Helladic matt-painted ware,[3] Lianokladhi geometric,[4] and Cypriote

[1] (1) p. 371.
[2] (3) 3406.
[3] Fimmen, *op. cit.*, p. 95, (3) 3485.
[4] Schuchhardt, *Alteuropa*, p. 141.

white ware[1] may all be assigned to the earlier phases of this city. Such imports both illustrate the extensive foreign relations of the town and serve to date its rise to the sixteenth century. Thereafter it remained a power till its destruction by the Acheans about 1200 B.C. But whatever contribution the Homeric Troy may have made to the development of civilization in the rest of Europe, it can only have been as a reflection of the Minoan-Mycenean culture.

AUTHORITIES

(1) Dörpfeldt, Götze, Schmidt and others, *Troja und Ilion.* (Berlin, 1902.)

(2) Heinrich Schliemann, *Ilios.* (English edition, 1880.)

(3) *Königliche Museen zu Berlin. Heinrich Schliemann's Sammlung trojanischer Altertümer beschrieben von* Hubert Schmidt. (1902.)

[1] (3) 3480.

CHAPTER V

Continental and Maritime Civilization in Greece

To complete our picture of Ægean civilization we must now turn to the Greek Mainland. But here the oldest culture has a quite different aspect to those hitherto described. Its

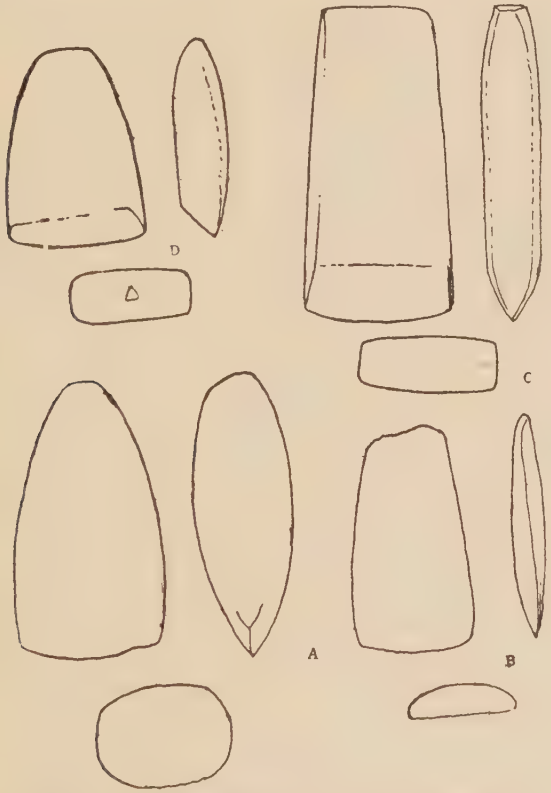


Fig. 30. Thessalian celts. After Tsountas ($\frac{1}{2}$).

authors were peasants and preferred the fertile valleys of Thessaly, Central Greece, and Arcadia to trading ports on the coasts. The neolithic people lived in regular villages of square

or round huts often with stone foundations. They hunted the deer and other game, possessed domestic animals[1] and practised agriculture.[2] The polished shoe-last celt of stone (Fig. 30, B), was really a hoe and is the typical implement of the neolithic agriculturalists in the Danube valley. With it went in the oldest period of Thessalian civilization the bevelled celt of Fig. 30, D. The celts may have already at this epoch as certainly in period II, been mounted in sleeves or perforated hafts of deers' horn as at Maglemose. Knives or razors of obsidian may indicate trade with Melos.[3] No specific weapons can be discerned. Shell bracelets and perhaps clay beads

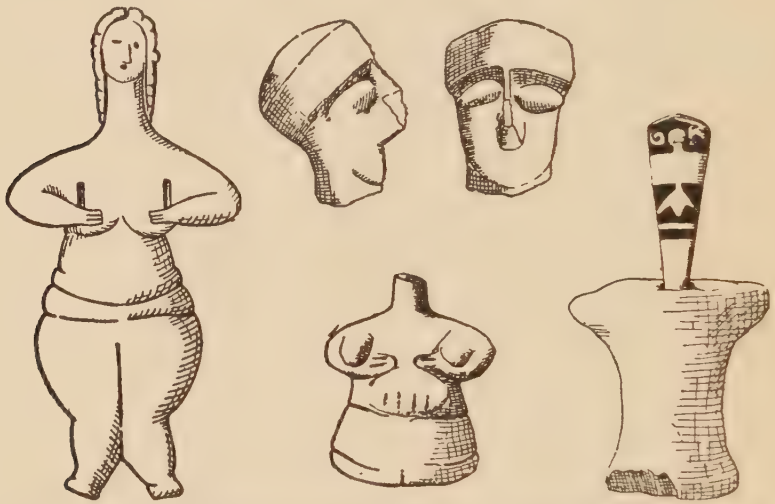


FIG. 31. Thessalian figurines. After Wace and Thompson (1, $\frac{2}{3}$; 2, $\frac{1}{2}$; 3, $\frac{1}{4}$; 4, $\frac{1}{3}$).

(" spindle-whorls ") were used for ornaments. Stone or clay stamps found at Tsani and Sesklo may have served as *pintaderas* for painting the person. In form they are extraordinarily like the Early Minoan III button seals, but they must in fact be considerably older.

The Thessalian peasants, like those of the Danube and the Ukraine, worshipped a mother goddess. She was portrayed

[1] Besides swine, cattle, and sheep, horses' bones have been found, though the date of the latter is uncertain.

[2] The grains actually studied, *Triticum vulgare* and *monococcum* and *Hordeum vulgare* are not older than period II. (5) p. 359, (6) p. 252.

[3] But there is said to be obsidian in the Argolid (7).

in very well modelled clay figurines. As in Crete these are steatopygous, but a standing type predominates on the mainland (Fig. 31, 1) and women clasping the breasts are suggestive of the old Sumerian type.[1] In at least one idol from Chæronea the Mother holds a baby in her arms.[2] Here we have the oldest example of the kourotrophos, whose cult reappears at Sesklo in period II and is widely diffused in the Danube valley and South Russia. A ritual significance may attach to model thrones or altars like Fig. 32, which have parallels in the Danubian area and Bulgaria. But despite these well developed religious conceptions, no burials of this epoch have been found.

The most remarkable achievement of the neolithic Grecians was their pottery. It appears already mature. The

FIG. 32. Miniature "Altar." After Wace and Thompson (⅓).

shapes, dishes with vertical sides or with hollow feet and globular vessels with strap handles and distinct necks (Fig. 33), betray little evidence of an origin in gourd or leather and sometimes look almost metallic. Technically, too, this pottery is perfect. The oldest Thessalian fabric is very thin, red and polished. It might be decorated with a series of stamped points,[3] with incised lines, or with simple linear motives in white paint (Fig. 33). More commonly, but perhaps rather later, the surface was covered with a white slip on which the patterns, purely rectilinear, but slightly reminiscent of wicker work, were drawn in glossy red paint. In Central and Southern

[1] e.g. (6) fig. 73½; cf. Andrae *op. cit.*, 51b.
[2] Ἐφ Ἀρχ, 1908, pp. 63f, pl. A 1.
[3] Note the fine wedge-shaped punctures of (5) pl. 13, for Danubian Ib analogies.

Greece the red monochrome fabric is replaced by a thin black ware, ornamented with knobs.

The first neolithic culture is most richly developed in Thessaly and Central Greece. Its southern limits are not yet fixed. Just as "Mycenean" remains began to turn up at every classical site after Schliemann's discoveries at Mycenæ, so since the discoveries of Tsountas, Thompson and Wace in Thessaly, neolithic wares are coming to light at many Mycenean sites. At the moment the southern limit lies in Arcadia. Neither the types nor the distribution of the neolithic material can easily be reconciled with a Cretan origin for the culture. It is tempting to connect this older civilization of Thessaly with those of Anau, Susa, and Mesopotamia, where painting was very early applied to pottery. But the only point which

Fig. 33. Pottery of Period I. After Wace and Thompson (¼).

Thessaly has in common with the latter areas is that the pottery is painted; forms, designs and technique are quite different and there is not one link to bridge the gap in space. In Anatolia the known material is absolutely different and though some ramifications of our culture can be traced in the Vardar valley,[1] and perhaps into Bulgaria, they do not take us into the Ukraine. The origin of the first neolithic civilization is, then, a mystery.

Period II 2600-2400 B.C.

No obscurity shrouds the source of its successor in Eastern Thessaly. In the second period a new people invaded Eastern Thessaly and reached Corinth without, however, touching

[1] *B.S.A.*, XXIII, pl. IV, 1-5. In 1924 unpainted vases of red ware said to be like Thessalian, were found overlying black faced fabrics.

Inner Thessaly or Central Greece (Map I). The invaders lived in porched houses of the megaron type (Fig. 34 (2, 3, 4)), and defended their settlements with ramparts. They introduced a new pottery, Dimini ware, rather courser than the older fabric, but decorated with spirals and meanders and polychrome painting.[1] They also made clay figurines, rather inferior to the older statuettes, but perforated for suspension,

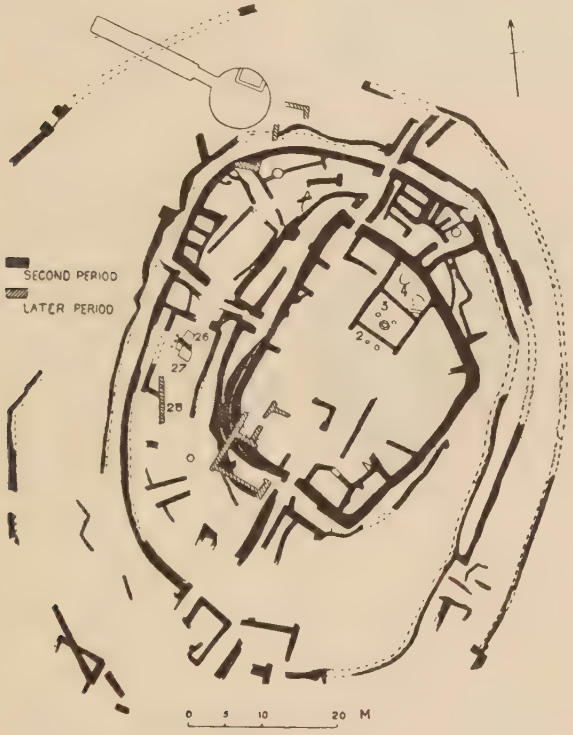


FIG. 34. Fortifications of Dimini. After Wace and Thompson.

and added to the human idols models of cattle. But some stone idols of the violin type may denote Cycladic influence. The shoe-last celt (Fig. 30, B) continued in use, but the bevelled type was no longer made and a thick-butted type (Fig. 30, C) began to come in.

[1] Five styles of painting are distinguishable—(*a*) white, (*b*) black, or (*c*) white bordered with black on a polished red clay ground, and (*d*) warm black, or (*e*) white bordered with black on a pale slip.

The new-comers may also have introduced the bow, represented by triangular or barbed arrow-heads of flint and the use of metal. Two flat celts found at Sesklo, seem certainly to belong here, while the date of the triangular daggers, awls and bracelet of copper found at the bottom of a trial pit at Hagia Marina in Phocis, and assigned by Sotiriadhis to period I is questionable.[1] Gold now first appears in the shape of a small ring-pendant from Sesklo (Fig. 35, 2.) It introduces us to a type imitated in stone or other materials, not only in Thessaly[2] but also in the Troad, Bulgaria, Denmark, Thuringia and East Prussia. Another important innovation was the use of buttons

1 2

FIG. 35. 1, Dimini bowl ($\frac{1}{4}$). 2, Gold ring-pendant ($\frac{2}{3}$). After Tsountas.

with V perforations,[3] such as are typical of the copper age in central and western Europe.

The distribution of Dimini ware and the associated novelties shows that it belonged to an intrusive people. The same pottery in all its variants, the megaron house, the fortifications, the suspended figurines, the models of cattle, the use of copper and gold, recur together in Transylvania at Erösd. It follows that the invaders reached Thessaly from that quarter, and a series of finds from the valleys of Eastern Bulgaria and Thrace mark their route. Their arrival had a far-reaching importance. To them we may certainly attribute

[1] cf. *R.E.G.*, XXV, p. 276 and fig. 15.

[2] The date of the gold specimen is certain and there are no grounds for assigning the bone pendant from Tsangli to period I.

[3] (5) p. 336, pl. 43, 1.

the introduction of the spiral ornament into the Ægean world, perhaps also that of the megaron house and the art of fortification. But Prof. Hubert Schmidt would go much further. He contends[1] that the northern invaders really founded the Minoan civilization, being the Cretans' instructors in metallurgy and vase painting. But Egyptian and Sumerian metallurgy are much nearer to Crete and older than anything we can expect in Transylvania. And why did not the northerners introduce the spiral to Crete? The Minoans painted their vases from E.M. I, but only adopted the spiral in E.M. III.

Meanwhile the older culture continued in a modified form in Inner Thessaly and Central Greece. At Orchomenos and H. Marina no break separates periods I and II, though Lianokladhi was deserted. Only we know from the stratification in Thessaly that in these regions also new wares were being

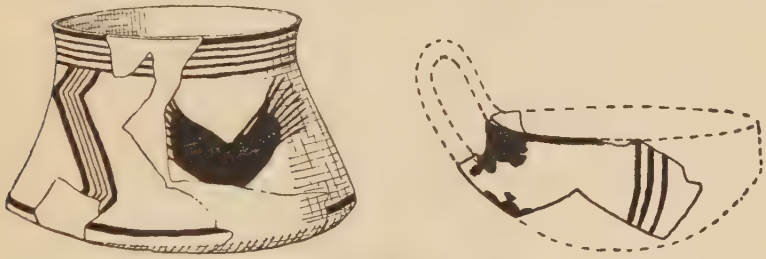


FIG. 36. Pottery after Wace and Thompson. (1, $\frac{1}{8}$; 2, $\frac{1}{2}$.)

made. Some are painted with rectilinear patterns or wavy lines in black, red, or both, on a smooth buff slip (Fig. 36, 1). Others show thin white paint on a black soot-coloured ground or are decorated by scraping off the sooty slip. The last named technique recurs at Boz Euyuk in Phrygia and in the lower strata at Vinča. A similar continuation of the old culture is known in the Peloponnese and probably spread to Ætolia, Acarnania, and Levkas. In that peninsula a short-headed skull was buried in the cave of Chirospilia, with some painted sherds and others ornamented with finger-nail marks, incised and punctured triangles or cord impressions.[2] The Leucadian material connects on in some still obscure way with the neolithic cultures of South Italy and Sicily. Apart from the cave burial at Chirospilia and the skeleton of an infant

[1] *ZfE.*, XLIII, p. 601. [2] *ZfE.*, 1912, pp. 845ff.

in a jar under a house of period II at Rakhmani, we know no more about the burial rites of the second neolithic period than of the first.

If, as I think we must, we neglect the " button seals " of period I, the chronology of neolithic Thessaly can only be reached by working backward from period III. In the layers immediately overlying those of period II, Early Helladic ware was imported. Since the latter may be assigned to E.M. III, the older " neolithic " cultures must both go back to the first half of the third millennium B.C. The stratigraphical data for later periods confirms this chronology. Thus, of the eleven strata at Tsani the first four belong to period I, the fifth to II, Early Helladic imports begin in the sixth and Middle Helladic (Minyan) in the eleventh.

Periods III and IV in Thessaly 2400-1200 B.C.

At the end of the second period Thessaly parts company from the rest of Greece, where a new culture of truly Ægean type was established (Map II). To the latter we shall return below. Here it will be best to summarize the later developments in the north. There the Dimini culture was dominant, but progress was partly arrested. The pottery of period III is decadent. The fine painted wares went out of use ; their place was taken by crusted ware in which a design of stripes or stumpy spirals was executed on a grey-black or reddish ground by a thick application of pink or white colour *after* the polishing and burning of the vase. Designs produced by this primitive method easily wash off. The same technique was employed in Danubian II at Vinča, Lengyel and in Moravia, and many of the forms, e.g. Fig. 36, 2, are the same in both provinces. But the bulk of the Thessalian pottery of period III was monochrome, brown or black in colour and far inferior to the neolithic wares. The forms were, however, very developed and included high-footed bowls, high-handled cups and goblets, hour-glass amphoræ, jugs with cut-away necks, and askoi. The last three forms belong to the Early Helladic repertoire further south. The bowls and goblets on the other hand, suggest Trojan connections and metal prototypes and have parallels in Hungary and South Italy. Nevertheless, the absence of the characteristic Trojan forms which

we meet in Eubœa, excludes the idea of an Anatolian colony in Thessaly.

Like the pottery, the figurines from period III are inferior. Clay torsoes with stone heads, Fig. 31, 4, belong to the very beginning of the period and have certain parallels in South Russia. Steatopygous females and ithyphallic males[1] in a squatting attitude, have Bulgarian affinities.

The finely polished small celts of stone were now rare ; the only common type was the clumsy rather cylindrical celt of Fig. 30, A, which looks so primitive. It survived for rough work while metal was being used for more delicate tools. Perforated stone implements were unknown to periods I and II, but in III wedge-shaped axes and spheroid and piriform mace-heads appeared as in the contemporary settlements in the Danube valley. The use of these stone implements and others of flint and obsidian shows the rarity of metal.

Cist graves of the Minyan type to be described below, are common all over Thessaly, but most of them belong to period IV. But we may for a moment go outside our province to mention a burial of the period at Drakhmani in Phocis. A contracted skeleton lay under a " barrow," and with it some monochrome vases of Thessalian type, and a matt painted jug of M.M. Ia form and decoration, which looks like an import from Crete.[2] Two gold rings, a pair of earrings with thickened ends and a (?) bronze knife like Fig. 38, 2 completed the furniture of the grave. Period III in Thessaly may have lasted from 2300 to 1800 B.C.

The succeeding epoch, apart from the cist graves of Minyan type and the Minyan vases in them, offers little that is new. Proof of the existence of native metallurgy is furnished by moulds for casting double axes and spear-heads. One of the latter would produce a weapon like Fig. 38, 1, which recurs in Shaft Grave IV, at Mycenæ, and therefore goes back to the seventeenth century. At the close of the period, L.M. III sherds are found at most sites and in some graves. But the evidence does not point to any colonization of Thessaly from the south save on the shores of the gulf of Volo. It looks rather as if Thessaly was partially depopulated in its last

[1] (6) Figs, 76, 1, and 110 respectively.

[2] Ἐφ. Ἀρχ., 1908, pp. 94f.; note fig. 16. (The " barrow " may be just a ruined settlement) ; cf. Evans, *Palace*, p. 168, fig. 117, c.

days. The period under review lasted from somewhere about 1800 to, say, 1100 B.C.

The rather fragmentary evidence suggests that a poor local culture, only superficially affected by the brilliant civilizations of the south, ruled in Thessaly from the last years of the third millennium till near the end of the second. It may prove that this culture embraced West Greece also; for the monochrome fabrics of Levkas and Kephallenia have much in common with the Thessalian, though here the direct influence of the Early Helladic civilization is also discernable. The same sort of evidence proves at least a parallelism between Thessaly and the Middle Danubian lands in the copper and early bronze ages. Indeed, the Thessalian culture of periods III and IV will probably turn out to be one facies of a great Balkan-Danubian cultural province which extended across the Adriatic to South Italy. The wish-bone and other curious handle types common in Thessaly III and IV, have close parallels on the other side of the Adriatic and several peculiar vase forms are common to both areas.[1] But now we must turn back from the second millennium to the third, and study from that point the developments in the south that run parallel to those described in the north.

Early Helladic Civilization 2600-1900 B.C.

While the neolithic culture of Greece, both in the north and in the south, was continental in character, the age of metals in the Peloponnese and Central Greece seems to have begun with the intrusion of a new people of southern and Cycladic affinities. The first metal-using culture therefore is called Early Helladic to signify its connection and parallelism with Early Minoan and Early Cycladic civilization. The new settlers did not choose the sites for their settlements exclusively with an eye to tillage, but rather with a view to trade and maritime commerce. So they occupied first sites near the coast, Tiryns, Mycenæ, Asine and several points round Corinth. They spread westward to Olympia and Levkas, and north through Megara and Attica to Central Greece. There the "neolithic" settlements of Orchomenos and H. Marina

[1] Cf. e.g., Fig. 45, 1, below from Taranto, with (5) fig. 52 from cist grave 51.

came to an abrupt end. New Helladic villages were founded on the ruins and on the deserted site of Lianokladhi (Map II).

Early Helladic civilization is still imperfectly known. On the strength of the stratification at one site, Wace and Blegen[1] have attempted to subdivide the pottery into three chronological groups, which should, but on Mr. Blegen's scheme do not, correspond with the three Early Minoan phases in Crete. We may note their results, then, without accepting them as universally applicable and without adopting the absolute chronology of Blegen. The sequence of wares actually observed was as follows : A : self-coloured wares with incised designs, including running spirals as in E.C. III[2] ; B : wares covered all over with a lustrous red or black paint, " primitive

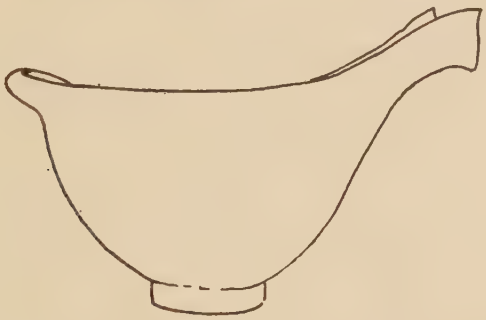


Fig. 37. Early Helladic " sauce boat." After B.S.A.(¼).

lustre ware " (or *Urfirnis*) ; and finally, C : patterned wares with geometrical designs either in lustrous brown on a pale slip or in dull white on the dark paint ground of B. The last group corresponds to the late E.C. III and early M.C. I wares of Phylakopi and the designs can be exactly paralleled in E.M. III Crete.[3] Since the commonest ware at Orchomenos II and Hagia Marina is the patterned variety, it may be that the invaders did not reach Central Greece till E.H. III.

The commonest Early Helladic shapes are the " sauce boat " (Fig. 37), the askos, hour-glass mugs, jugs with cut-away necks, and globular jars with short funnel-like necks and lug handles on the belly.

[1] *B.S.A.*, XXII, pp. 177f ; (1) pp. 4ff and p. 121 ; cf. Glotz, p. 23.
[2] Not like the Pelos ware to which Blegen compares it.
[3] *J.H.S.*, XXXV, pp. 199ff.

At Tiryns[1] the Early Helladic settlers built round houses, but at Orchomenos oval and apsoidal houses, containing *bothroi* (or pits filled with ashes) replaced the older round huts. Tiryns was already fortified. In the Peloponnese interment took place in pit-caves or rock-cut chambers, containing several corpses and so recalling the collective burials of Crete[2]. On Levkas, groups of small cists enclosed within a circle of stones, made up a sort of family grave plot.[3] Few metal objects have yet been published, but it is clear that the Early Helladic people, besides copper or bronze, possessed also precious metals. The tomb at Zygouries, near Corinth, contained gold pendants and a silver diadem, while a magnificent gold sauce boat in the Louvre proves Early Helladic civilization to have been richer than was at first supposed.

The rite of collective burial, the furniture of the tombs, particularly the diadems and a leg-shaped amulet and, above all, the pottery, proves the Minoan-Cycladic affinities of these settlers. And they, like the other Ægeans, were engaged in commerce. Trade with the Cyclades is illustrated on the one hand by the sauce boats from Syros and Amorgos, on the other by finds of duck vases in Attica and an Early Cycladic idol near Corinth. The primitive lustre ware from Hissarlik and a Trojan *depas amphikupellon* from Orchomenos II[4] mark the extension of that intercourse to Troy. Indeed the trade from the Ægean westward, which brought to Sicily the famous bossed bones and the Troadic pommels may well have traversed the Peloponnese. That explains both the occupation of Levkas and the remarkable analogies between Early Helladic and Siculan I pottery—especially the hour-glass tankards (cf. Fig. 45, 5 below). So Early Helladic Greece is just a province of Ægean maritime culture with the difference that the ethnic base must have been largely continental. We may then add the Early Helladic Grecians to our Early Ægean confederacy which was so potent a factor in civilizing the Western Mediterranean.

[1] (2) and plan.

[2] *A.J.A.*, I, p. 314 (Corinth); *Art and Arch.*, XV, p. 88; *Jb.d. Inst.*, XXXVII, p. 294 (Zygouries).

[3] Fimmen, fig. 49 R, cf. (7).

[4] Fimmen, p. 137.

The Middle Helladic Period and Minyan Culture, 1900-1600 B.C.

Their civilization developed peacefully from about 2600 to 1900 B.C. Then came a catastrophe. In Central Greece Orchomenos II was stormed by some invaders and burned to the ground. The victors reoccupied the site which they had conquered, and built there a town of rectangular houses with several rooms. The new people were characterized by the habit of burying their dead doubled up in stone cists or under broken

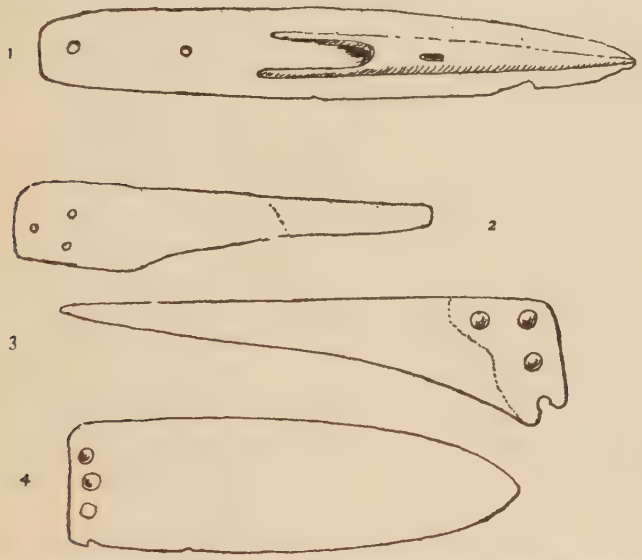


Fig. 38. Bronzes from Minyan graves in Thessaly. After Tsountas ($\frac{1}{2}$).

jars generally among the houses, and by their fine wheel-made pottery, called Minyan ware. The name of the pottery may, for want of a better, be applied also to the cist grave people without prejudice to the question of their relation to the Minyans of Greek tradition. In the Peloponnese the change was less abrupt. Though cist graves and Minyan ware appear with the beginning of Blegen's Middle Helladic I (= M.M. II) period, the contemporary matt-painted ware (Fig. 40) must be regarded as a sort of continuation of the Early Helladic tradition ; for it is virtually identical with the Middle Cycladic I-II pottery of Phylakopi.

We have thus two distinct cultural elements in Middle Helladic times represented by these two fabrics. No rigid distinction is, however, possible. A variety of matt-painted ware occurs in Central Greece, just as cist graves, Minyan ware and local imitations thereof (generally hand-made) are found in the Peloponnese. But it is only in Central Greece that Minyan ware occurs in such quantities that its use for domestic purposes can safely be inferred. Elsewhere on the Mainland, as at Phylakopi, Minyan was an imported luxury article. In racial terms the " Minyans " had virtually supplanted the Early Helladic population in Central Greece ; further south they were just a ruling caste.

The Minyans were warlike folk. The furniture of their tombs consisted largely of bronze weapons,[1] knives, spear-heads and daggers of the types shown in Fig. 38. Their advent seems to have interrupted trade and to that extent retarded progress. Yet their pottery is technically superior to anything known hitherto on the mainland, and the Minyans must be judged on this evidence ; for the poverty of their graves was due rather to their outlook on life than their state of civilization. True Minyan is wheel-made and has a silver-grey colour due to the reduction of the iron oxides in the clay. It thus presupposes the use of the potter's oven, or at least a muffle. The principal shapes[2] are ring-stemmed goblets, high-handled cups (Fig. 39 a), craters (of the form of Fig. 39, c), and amphoræ and all show metallic influence. The vases from apsoidal megara at Thermon in Ætolia[3] belong to a local hand-made variant and deserve notice because of the resemblance of their handles to Italian types (Fig. 39, c-d).

The origin of these Minyans is a mystery. The technique of their pottery recalls what was happening in the last phases of Troy II, and some few Minyan shapes can be explained from that quarter. So Forsdyke[4] proposed to bring the founders of Orchomenos III from the Troad. But though his arguments are very powerful, Minyan is there assigned to cities V-VI, which can hardly go back to 1800 B.C., when Minyan was first imported into Melos. The grave-form and the shapes of the

[1] Cf. analysis in *B.C.H.*, 1906, pp. 40f. ; 1907, pp. 139ff.
[2] All shapes illustrated *J.H.S.*, XXXV, p. 197, fig. 1.
[3] Ἀρχ. Δελτ, 1915, pp. 225ff ; 1916, pp. 179ff.
[4] *J.H.S.*, XXXIV, pp. 126ff.

goblets in Greece have close analogies in the Early Hittite burials further east[1]. On the other hand, Minyan might be considered merely an improvement of the wares of period III in Thessaly. Some of the forms and the Minyan funeral customs can equally be paralleled in the Early Bronze Age of Central Europe, at Monteoru, Aunjetitz or Remedello. Perhaps then the Minyans are just the result of a southward

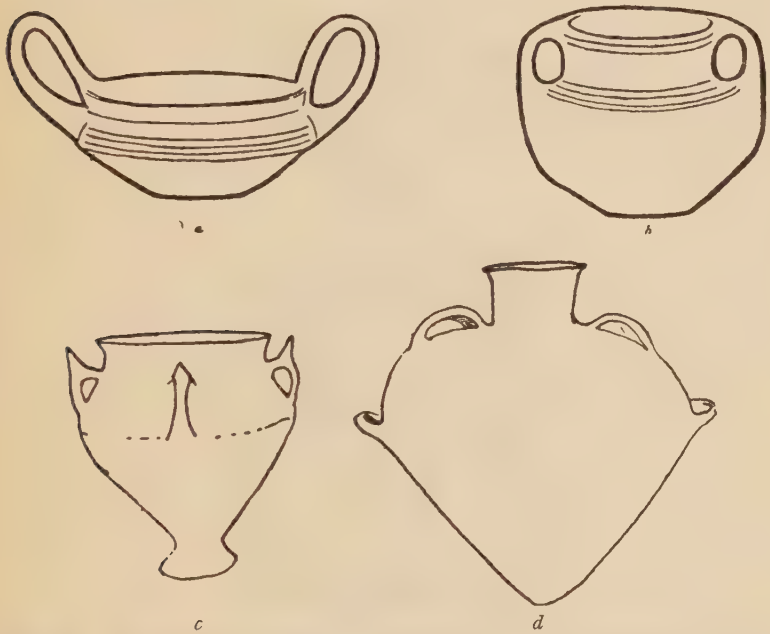


FIG. 39. *a-b*, Minyan pottery from Thessaly ($\frac{1}{5}$); *c-d*, imitations from Thermon ($\frac{1}{15}$).

extension of our Thessalian-Balkan-Danubian culture with particularly powerful inspiration from the side of Troy. In any case the cist-grave culture dominated the whole of the peninsula southward to the Argolid. It may even have reached Kephallenia[2] and Levkas where cist graves, but little or no Minyan ware occur. But on Levkas the Middle Helladic cists were enclosed in rings of stone as in the previous epoch (Map III).

[1] *L.A.A.A.*, VI, pp. 88f.

[2] Cist local graves with local monochrome fabric, but Minyan forms. Kavvadias, Προιστορική Ἀρχαιολογία pp. 355f, figs. 467-9.

The Minyan civilization and the matt-painted ware, too, lasted for several centuries in Central Greece. Orchomenos III was twice rebuilt and in Thessaly some Minyan vases seem to have been contemporary with L.M. III imports. To the same general context belongs the third settlement at Lianokladhi. But the characteristic ware here was not Minyan, but a fabric painted with geometrical designs, including degenerate

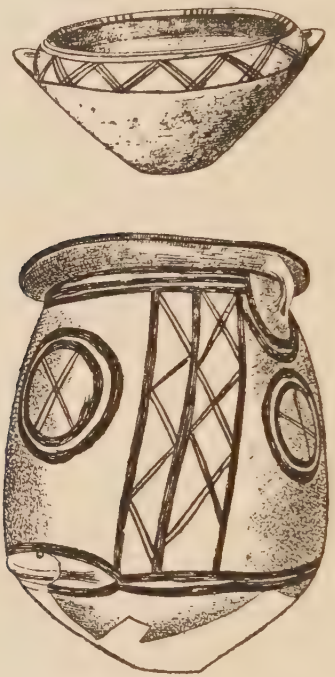


FIG. 40. Matt-painted ware. Ægina. ($\frac{1}{10}$)

spirals on a reddish brown ground. Mr. Wace tells me that he now regards this pottery as a northern variety of Middle Helladic matt-painted ware. The typical shapes, however,—hour-glass mugs and spherical jars (Fig. 41)—go back directly to Early Helladic types. In any case this ware is in no sense the immediate antecedent of the iron age geometric pottery. The date of the settlement lies between the end of M.H.I (=M.M. II) and L.H. II, i.e., between 1650 and 1450 B.C.

The Extension of Minoan Civilization to the Mainland

1625-1200 B.C.

Before the end of the Middle Helladic epoch or about 1625 B.C. the Minoan civilization was transplanted bodily to the Mainland. The first evidence of the supersession of the native Middle Helladic culture by the Minoan is found at Mycenæ, a site which commands an important artery of trade

Fig. 41. Lianokladhi III. After Wace and Thompson (¼).

between the south and the north and west. The old settlement on the acropolis now became the seat of a wealthy and powerful dynasty. The kings were buried within the bounds of the Middle Helladic cemetery in the six famous Shaft Graves. The rich furniture of the royal tombs permits an exact dating of the change. The oldest of the six, no. VI, contained exclusively M.M. IIIb objects. Graves II, IV, and V also overlap with Middle Minoan III. Thus the Shaft Grave epoch must begin before 1600 B.C.

The new civilization is almost purely Cretan. Not only is the metal work and jewelry of Minoan origin, the princes of Mycenæ worshipped the same mother goddess with the same rites as the lords of Knossos. Similarly the Myceneans adopted the Minoan use of signet rings, the Minoan script, the Minoan game of draughts, and judging by the seals and plaques, the Minoan drawers for men and flounced skirts for women. So the palace was probably provided with a light-well and decorated with frescoes in M.M. III—L.M. I technique. Evans and others infer from all this an extension of Minoan domination to the Mainland. But some distinctions to which Wace and others have drawn attention should be noted. The lords of Mycenæ were buried in the old Helladic cemetery, and in a form of grave which might be regarded as a glorification of the Minyan cists, though much larger—one tomb is 16 by 10 ft. square—and containing several extended bodies. The tombs were marked by sculptured stelæ to which Crete offers no parallel. The kings wore beards while the Minoans usually shaved their faces. Besides imported Minoan weapons and vases, a spear-head of continental type like Fig. 38, 1 and Minyan and matt-painted vases belong to the native tradition. Among the ornaments the gold spiral pendants have been referred by Hubert Schmidt to Central European prototypes.[1] Finally, the palace may have been a megaron of the continental type, though the latest investigations of Wace seems to show that, despite the seemingly early frescoes and the paintings of the hearth, the existing megaron was no older than L.H. III[2]. It might then be as fallacious to infer a Minoan sovereignty over the Mainland from the ruins of Mycenæ as it would be to assume a political conquest of Rome by the Greeks. But the spiritual domination of Crete is unquestionable.

During the Shaft Grave epoch the local civilization had continued to exist at Korakou, Orchomenos and elsewhere, although strongly influenced, for instance in its pottery, by Minoan models. But towards the middle of the sixteenth century the Minoan supremacy extended over the whole of the peninsula. At this epoch the first palaces of Tiryns and

[1] *ZfE.*, XXXVI, pp. 608f. The same author seeks a Danubian origin for the asymmetrical halberd of grave VI. But the weapon is in fact proper to the "Iberic West."

[2] (7) §8; cf. Rodenwaldt, *Der Fries des Megarons von Mykenai.*

Thebes, neither of them a megaron,[1] but both adorned with frescoes in Minoan technique, were built. At the same time a series of stately beehive tombs began to rise and large chamber tombs were excavated in the rock and furnished with L.M. Ib vases. The location of these tombs on trade routes, radiating from Crete, often near the coast at Kapokli,[2] on the gulf of Volo, Thorikos[3] in Attica, Mycenæ itself, Vapheio[4] near the head of the Laconian gulf, and Pylos[5] and Kakovatos[6] on the west coast (Map IV)—is significant of the commercial mainsprings of Minoan imperialism. It must, however, be observed that no immediate ancestors of these beehives have been found in Crete, since the vaults of the Messará were not in use after 2000 B.C.

The great tombs on the west coast with their exceptionally rich furniture show the importance of Adriatic trade. Amber was doubtless the principal commodity that travelled down that route. It had already begun to reach Greece in the Shaft Grave period, but the Kakovatos tombs contained large quantities of the precious gum. The traffic incidentally brought much wealth to the lords of Levkas. In the non-Mycenean cist graves on the plain of Nidri Dörpfeldt found a silver armband, a gold-hilted sword, and gold beads.[7] Perhaps these graves go back to the Shaft Grave epoch. In Late Helladic I it was the lords of Kakovatos who were the principal intermediaries of the traffic in Greece. And so their tombs contain besides amber, many objects of southern origin, such as ivory. The most remarkable discovery in the Kakovatos tombs, however, was an iron ring which has a counterpart at Vapheio.[8] These are the earliest pieces of metallic iron in Europe and they show that it was regarded as a precious metal in the sixteenth century.

Even in the midst of the flood of Minoan imports, the native civilization still survived. Its vitality is demonstrated by the continued manufacture of matt-painted ware and in the continental preference for shapes going back to Minyan

[1] (2) p. 11; cf. (4), p. 200.
[2] Ἐφ. Ἀρχ., 1906, pp. 211ff.
[3] *Ib.*, 1895, pp. 221ff.
[4] *Ib.*, 1889, pp. 129ff.
[5] *Ib.*, 1914, pp. 99ff.
[6] *A.M.*, XXXIV, pp. 255ff.
[7] VI^te. *Brief über Levkas-Ithaka.*
[8] *A.M.*, XXXIV., p. 275.

types, even in fabrics which are essentially Minoan in technique and decoration. Late Helladic I and II were periods of fusion in which Minoan culture was being imposed upon the Mainland. In the subsequent epoch beginning about 1400 B.C. the natives had assimilated the culture of Crete. And then the continental peoples reasserted themselves. The Cretan palaces were sacked and the centre of gravity in the Ægean shifted from the island to the mainland. The continental megaron house became universal—not only at Gla, Athens, Tiryns and Mycenæ, but even at Phylakopi and Phæstos. The walls of the continental citadels were extended and rebuilt with Cyclopean masonry, the first and only examples of megalithic architecture in the Ægean.[1]

The focus of Ægean civilization at the time of its widest dispersion was no longer Crete but the Greek Mainland. It was thence that Mycenean pottery in the traditional sense was distributed to all the Ægean islands, the coasts of Anatolia, Thrace and Macedonia and over the western isles, Kephallenia and Corfu, to Sicily and South Italy. Mycenean rapiers reached Epiros,[2] Bulgaria,[3] and even Hungary. Many of the islands must have become simply Minoan-Mycenean colonies, and such may have been founded on the opposite littoral, but the extension of colonization was purely coastal.[4] A group of tombs on the gulf of Volo denotes a Mycenean trading station in Thessaly, but the fertile interior was never occupied by the southerners.

The Mycenean civilization carried on the Minoan tradition, perhaps gave it a new lease of life. But artistically it was already exhausted, witness the degradation of the goldwork and the conventionalization of the ceramic designs. The great expansion of the fourteenth century is just an episode. Just as the extension of the Minoan culture to Greece prepared the way for the fall of Knossos, so the commercial hegemony of the Peloponnese at once armed and incited its northern neighbours for an attack. The appearance with ever growing frequence of slashing swords and safety pins[5] in late Mycenean tombs,

[1] (7).

[2] Dordona, in Athens Museum.

[3] Casson in *Man*, XXIII, 107.

[4] Cf. Fimmen, pp. 95f.

[5] Especially on Kephallenia, Kavvadias, *op. cit.* pp. 367 & 737, & at Thebes Ἀρχ. Δελτ. 1917, pp. 151f.

foreshadows the overthrow of Ægean culture to make way for a new one with its home on the Danube.

Through the Mycenean the Minoan civilization left a lasting legacy to Greece; for instance, most of the great sanctuaries of classical times, Delos, Delphi, the Argive Heræum, and even far Dodona, have yielded Mycenean remains and the central features of their cults are Minoan. But to trace such effects is outside the scope of this book. For us the significance of the Mycenean age is rather as a vehicle for the transmission of the Minoan achievement than as an independent creative epoch. The creation lay in the past in Crete and in the present in the Danube Valley.

Principal Authorities

In addition to those cited in Chap. II.

(1) Blegen, *Korakou, A prehistoric Settlement near Corinth.* (New York, 1921.)
(2) Karo, *Führer durch die Ruinen von Tiryns.* (Athens, 1915.)
(3) Rodenwaldt, *Der Fries des Megarons von Mykenai.* (Halle, 1921.)
(4) Rodenwaldt, *Tiryns* II. (Athens, 1912.)
(5) Ch. Tsountas, Αἱ προϊστορικαὶ Ἀκροπόλεις Διμηνίου καὶ Σέσκλου (Athens, 1908).
(6) Wace and Thompson, *Prehistoric Thessaly.* (Cambridge, 1912.)
(7) Wace, Lamb and others, *Excavations at Mycenæ.* *B.S.A.*, XXV.

CHAPTER VI

The Spread of Civilization by Sea

Sicily and South Italy

In the four preceding chapters we have seen the growth of a great civilization in the Ægean. Incidentally the ramifications of its far-flung commerce have been mentioned. But in the last chapter one significant limitation emerged. Ægean civilization did not penetrate far on the mainland ; its influence was mainly coastal. Acting on this hint we may next sketch in bare outline the diffusion of the inspiration radiating from the Eastern Mediterranean along the sea routes westward. Sicily and South Italy have already been singled out for mention by the results obtained in dealing with Troy and Early Hellas.

Neolithic Period

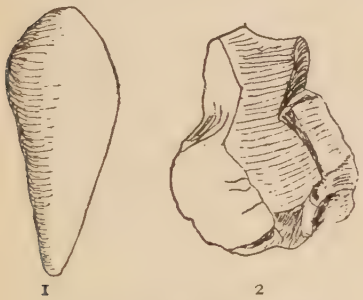
Sicily and South Italy in neolithic times formed an unitary province distinct from and opposed to Upper Italy. In this region the remains of Upper Palæolithic man are doubtful while epipalæolithic material is altogether absent save in so far as some of the artefacts from the neolithic stations themselves exhibit epipalæolithic traits. The neolithic culture on the other hand invites comparison with that of Crete and Greece in its pottery, in its use of obsidian and in the worship of a mother goddess represented by clay figurines.

The neolithic settlers in eastern Sicily and South Italy dwelt sometimes in caves, more often in regular villages. The latter were in several cases defended by trenches and rudimentary ramparts,[1] while within the protecting earthworks some sort of cobbled streets or squares have been observed.[2] All this betokens an organized social life among the villagers.

[1] Stentinello (5), p. 161 ; Megara Hyblæa (6), p. 122 ; Matera (3).
[2] Stentinello (*ib.*) ; Molfetta (4), p. 239.

The shape of the Sicilian huts cannot be determined. In Apulia both round and square huts of wattle and daub, with carefully prepared floors of stamped earth, were found at Molfetta, while at Matera, as at Ripoli on the Vibrata, the huts were partly subterranean. At Molfetta the dead were buried among the houses in oval trenches, walled with small stones with a niche for the feet. The body usually lay contracted on the right side and was once accompanied by a small vase filled with red ochre. Orsi[1] believes that the same tomb type prevailed in Sicily. The skulls are dolichocephalic and are assigned by Mosso to the Mediterranean race. At Matera[2] the dead reposed in round pits described as " sepulchral huts."

The neolithic people possessed goats, sheep, cattle,[3] and swine, all domesticated, and undoubtedly engaged in fishing.



1 2

FIG. 42. 1, Basalt, Molfetta; 2, Quartzite, Tre Fontane. After M.A. (½).

FIG. 43. Pottery designs, South Italy and Sicily (about ½).

But Peet denies that they practised agriculture. They must have been able to undertake short voyages, for they used obsidian. The specimens so far studied are not Melian, but come from the neighbouring Æolian Islands.[4] Their implements of flint and obsidian are of simple form, with only a little unilateral retouching. Polished stone celts are rare; the people contented themselves with picks of basalt (Fig. 42, 1), limestone or quartzite--the latter just hacked so that they look " absolutely palæolithic "[5]—which served for digging.

[1] (6) p. 123.
[2] (8) p. 380.
[3] Both *Bos brachyceros* and *primigenius*, *B.P.*, XVI, p. 203; (3) p. 306.
[4] (6) p. 124.
[5] *M.A.*, XXIII, p. 490.

Shells and possibly axe-amulets[1] and stone bracelets[2] served for personal ornaments.

The highly developed neolithic pottery contrasts with the comparative poverty of the stone inventory. The most characteristic ware was decorated with stamps or incisions while the clay was still wet. The most typical motives are shown in Fig. 43. These motives are common to Sicily and Italy from the Cape Leuca to the Tremiti Islands. In Sicily much more elaborate patterns were produced. Some of the impressed designs from settlements in Catania present most extraordinary resemblances to the earliest passage grave pottery of Denmark.[3] The incisions are filled with white, exceptionally with red,[4] colouring matter. All this material as Peet has pointed out, presents generic analogies with that of neolithic Crete. It is far, however, from being identical with the Cretan and parallels could be quoted in Thessaly. Besides this stamped and incised ware a plain fabric was in use at Molfetta and Matera. Peet and Mayer regard this as later, though the excavations by Mosso and Relini have failed to produce any stratigraphical grounds for such a division.

Finally, both in Italy and more rarely in Sicily, painted vases occur. Italian excavators incline to regard these fabrics as imported, pointing out that the majority have been found in the neighbourhood of convenient havens. But the decorations and even the forms of the vases vary from place to place. In Apulia only black paint is generally employed and the motives include, beside triangles and Z figures, rudimentary spirals (Fig. 44, 1-2). The curvilinear motives suggest some vague connection with Dimini ware of Thessaly. The plastic bulls' heads on the handles[5] again have parallels at Dimini and may reveal the origin of those peculiar developments of the handle which take place on both sides of the Adriatic in the Early Bronze Age. The pottery from Ripoli, the date of which is still not well ascertained, is similar to that from Apulia. But curvilinear motives do not occur and some designs are more like those from a cave on Capri. Curiously enough, an exact

[1] One at Megara Hyblæa from the trench.
[2] At Tre Fontane in Catania (Sicily), *M.A.*, XXIII, p. 491.
[3] Cf. *M.A.*, XXIII, pls. III, 2, IV, 9 and V 10, with S. Müller, *Stenalders Kunst*, figs. 121-136.
[4] (7) p. 68.
[5] (4) Fig. 63 (3) figs. 42, 51 and 52.

parallel to the windmill figure on the Vibrata sherds comes from Anau II in Turkestan.[1]

The Sicilian painted pottery often shows polychrome decoration in black and red, the latter paint being lustrous. It shows no certain relations with any Ægean fabric yet discovered. The vessel shown in Fig. 44, 3 recalls in shape dishes associated with the bell-beaker in Sardinia and Central Europe.

The neolithic culture just described may have spread from Sicily and the heel of Italy along the Adriatic coasts and islands as far as the Vibrata Valley (Maps I and II). There it shows signs of lateness and of admixture with another culture of more continental type coming in the opposite direction.

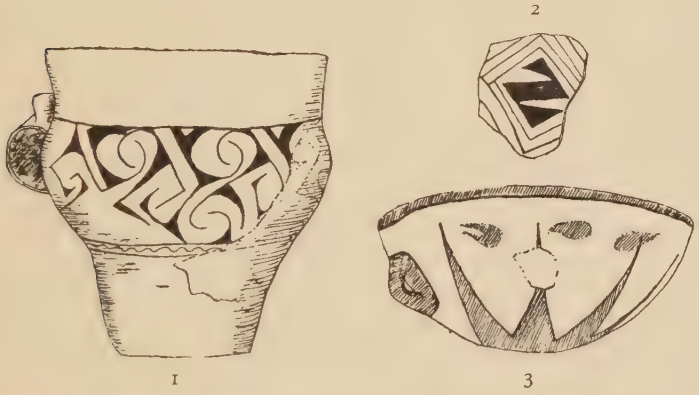


FIG. 44. 1, Molfetta, black on buff ($\frac{1}{4}$); 2, Matera; 3, Megara Hyblæa, red and black on buff ($\frac{2}{5}$). After M.A.

The character and the distribution of the neolithic remains then could be explained by the hypothesis of an invasion by Mediterraneans. If these came from North Africa, if not via Crete, at least from the primitive home of the Cretans, the parallelism to that island would become intelligible. On the other hand, Dr. Mayer, who treats the Apulian culture as older than the Sicilian, suggests a Balkan origin for both. His theory perhaps accords best with the distribution of the neolithic sites on the east rather than on the south coasts.

The neolithic period in Sicily must have lasted a long time and Peet has proposed to distinguish in it a phase later

[1] (8) p. 361, fig. 30; cf. Pumpelly, pl. 32, 1.

than that illustrated at the type station of Stentinello. His second phase is represented by the cave of Villafrati in the north-west of the island, with pottery decorated with ribbons sharply incised in the clay when it was already dry. Such material is found pure only at Villafrati, in a trench grave identical in form with those of Molfetta at San Cono in the centre of the island, and in some ruined graves near Gela.[1] Elsewhere the supposedly later ware is associated both in caves and settlements with simple Stentinello ware.[2] Stratigraphical evidence for Peet's distinction is therefore still lacking, but it seems intrinsically probable. The most striking ceramic shape for this second period is the bell-beaker with its characteristic zoned decoration executed with a cogwheel (Fig. 59, 4). The same ware was found not only in the caves of the north-west, but also in villages in Catania.[3] Another innovation may have been the introduction of the bow.[4] In any case the presence of a brachycephalic element in the population is certain; for three of the four skulls from Villafrati were round.

The combination of short-heads and bell-beakers suggests a visit of Spanish people; for, as will appear presently, the bell-beaker seems to have been evolved in Spain and its users there as elsewhere were short-headed. Now Thucydides relates that the first inhabitants of Sicily, after the mythical Kyklopes and Laistrygones were called Sicanians and came from Iberia. Have we in the bell-beaker folk of Villafrati a confirmation of that venerable tradition? Peet rejects such a view and certainly the bell-beakers are too rare in Sicily to allow us to imagine a colonization of the island by immigrants from the west. Still the new ethnic element is undeniable.

Peet's second phase of the Sicilian stone age cannot be so clearly identified on the mainland. One sherd from the middle strata at Coppa della Nevigata[5] looks suspiciously like beaker ware, and at Matera there is a large quantity of sherds with decorations not unlike those of Villafrati[6], and similar ware occurs sporadically at the Pulo of Molfetta.

[1] *B.P.*, XXXIV, p. 155, pls. III and IV.
[2] (9) p. 69, *B.P.*, XLI, *suppl.*, pl. I; *M.A.*, XXIII, pl. IV.
[3] *M.A.*, XXIII, pl. IV, 10.
[4] Several arrow-heads, some serrated from San Cono, but rough examples also from Catanian villages with Stentinello ware.
[5] (3A) pl. IX, 60B.
[6] (3) pp. 221ff, pls. XXI-II.

Chalcolithic Period

In the first age of metals the course of development in the peninsula diverges from that in the island of Sicily. We will therefore sketch the phenomena observed in each area separately. On the mainland the type station is the Pulo of Molfetta, a natural depression, whose rocky walls are honeycombed with caves. The material collected here may, however, be supple-

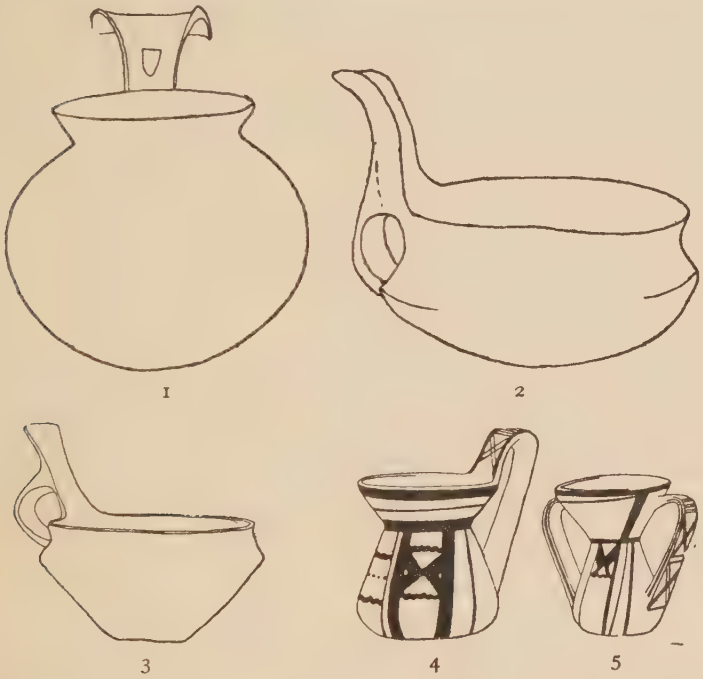


Fig. 45. 1-2, Collective tomb, Otranto; 3, Dolmen of Bisceglie; 4 and 5, Sicily ($\frac{1}{4}$).

mented by that from the middle strata at Coppa della Nevigata, and from some tombs and caves. The civilization of the Pulo is regarded as a continuation of that of the huts above it. Indeed, some neolithic sherds have been found in the Pulo itself. But the fabric typical of the period is a polished ware differing from that of the neolithic huts in the absence of a slip. Its distinctive mark is a curious development of the handles (Fig, 45, 1-3), a feature to which we have called

attention in Thessaly during periods III and IV, and which is also met in Bosnia. Ornament is now rare and is restricted to the use of plastic strips as on the Alpine slopes. However, a vase with human eyes and a nose in relief on the rim[1] just like Fig. 26, 6 shows connection with Troy or Vinča. Another innovation which may have come either from the Ægean or the Danube was a clay stamp or *pintadera*.[2] In addition, we may mention as general marks of the period, moulds for casting small objects, awls or pins, of metal, a stone mace-head, and some finely worked tanged arrow-heads of flint.

Simultaneously with the introduction of the use of metals a change in the funeral rites denotes the influence of new ideas ; for interment in collective tombs now replaces the separate graves of the neolithic epoch. In South Italy some of the collective tombs belong to the full bronze age and others, having been in use for many generations, belong to both periods, but some containing vases comparable to those from the Pulo may be regarded as chalcolithic.[3] The tombs themselves are generally just pit-caves as in Eubœa. With the skeletons, which are often in disorder, are found the ashes and animal remains which usually characterize such collective sepulchres. The collective tombs are found as far north as the Province of Rome, but here the furniture is different. Daggers and flat celts of copper, finely worked lance-heads of flint and stone hammer-axes[4] all betray the influence of the Remedello culture and show that in Central Italy we are still on a cultural frontier.

Beside the pit-caves and chamber-tombs excavated in the clay or rock, megalithic graves were erected just in the heel of Italy. The Italian " dolmens " seem to belong typologically to the last phase of megalithic architecture, the covered gallery or even the dolmenic cist to which that led. They show all the usual characters of megalithic funerary usage, the multitude of corpses, the ashes of purificatory fires, even at times the holed-stone, but here in the side.[5]

[1] But such vases are assigned to the " neolithic " period at Matera (7), pp. 70f.

[2] (3) pl. IX, 19.

[3] e.g., Matera, *L.A.A.A.*, II, p. 80 ; Gioia del Colle (2), pp. 88f ; and Taranto, *M.A.*, XXVI, pp. 494 ff.

[4] Sgurgola (1) ; Pitigliano, *B.P.*, XL, p. 53 and XLIII, p. 97.

[5] (2) p. 68.

The pottery from the megaliths is for the most part the characteristic ware current locally in the chalcolithic or early bronze age. Notable variants, however, are a carinated vase of clay,[1] very closely resembling some stone vases from Knossos, which also finds parallels in France and Portugal, and a miniature stand shaped like the vase-supports of French "dolmens."[2] Little bronze was actually found in the tombs. Indeed, the metal was limited to some discs[3] with punctured ornament for sewing on garments and green stains on the bones. But the pottery is quite sufficient to date the "dolmens" to the chalcolithic or early bronze age. Discs of amber were found in the "dolmen" of Bisceglie. These connect on with the finds from the late megaliths of the Cevennes and Pyrenees and suggest that the introduction of the great stone grave to Italy was a reflex of intercourse with South France.

Before considering other problems raised by the chalcolithic epoch in South Italy, the contemporary culture of Sicily must be described. The beginning of the chalcolithic period, called by Orsi Siculan I, saw a marked and sudden change in the east of the island (the west is almost unexplored). The older settlements were deserted, the old stamped and incised wares gave place to painted or plain fabrics with novel and strange forms, and collective tombs superseded the old trench graves. On the other hand, the villages of the period still consisted of round and square huts and were defended with earth-works as in neolithic times.[4] Flint was still mined and still worked into the same old simple forms without any of that fine flaking which distinguished the chalcolithic age of Upper Italy. Indeed flints of an "absolutely archæolithic aspect"[5] are common. Many neolithic motives survived in the new pottery and Orsi now holds that the technique of the painting may itself go back to that of the neolithic wares.[6]

Siculan I pottery is painted in matt black on a pink slip or a deep red ground. The curious patterns of triangles and other rectilinear figures have been compared by Peet to those of the older neolithic wares of Thessaly and Central Greece, but the forms and technique are so utterly different that the

[1] Bisceglie, Mosso, *Dawn*, fig. 129.
[2] (2) Fig. 25; cf. fig. 134 below.
[3] (2) Fig. 2b.
[4] *B.P.*, XXXVI, p. 190.
[5] *B.P.*, XLIII, p. 7 and pl. I.
[6] (6) p. 136.

partial coincidence of the designs must be accidental. Myres' comparison with the modern Kabyle ware of North Africa may at least mean that the latter region in prehistoric times shared with Sicily some preceramic group of vessels. But the forms[1] of the Siculan I vases, especially the hour-glass mugs with strap handles, Fig. 45, 5, point very clearly to the Early Helladic pottery of Greece or the Lianokladhi geometric that derives therefrom. The technique of the latter has also much in common with the Sicilian.

The civilization of the epoch is best illustrated by the tomb furniture. This confirms the inference from the quantities of flint and obsidian in the settlements that metal was relatively rare. The only metal weapons so far discovered come from graves at Monte Racello that belong to the very end of the period and the transition to Siculan II. They are nearly flat copper daggers or halberds which resemble Spanish rather than Ægean models. Copper was more freely employed for ornaments

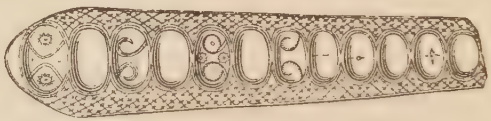


Fig. 46. Bone Plaque. Castelluccio (½).

—thin discs, helical wire tubes, spectacle spirals and axe-amulets. Such ornaments have both western and eastern parallels.

Other ornaments are axe-amulets and asymetrical barrel-shaped beads of stone and perforated teeth of boars and other animals. More significant are the bone plates with sculptured bosses in relief (Fig. 46), and a bone knob or pommel[2] like Fig. 28, 3, both of which recur at Troy. Ægean influence is also revealed in the use of clay horns[3] recalling Minoan cult objects. Mosso reports the discovery of such emblems in a sanctuary accompanied by *Pectunculus* shells, which in Crete too had a religious significance.[4] But the best idea of the spiritual life of the time is given by the tombs.

Natural caves or the disused shafts of flint mines were employed for burials, but the characteristic tombs of Siculan

[1] Among the Siculan I shapes a square dish is to be noted, *B.P.*, XXXVI, pl. XIII, 4.
[2] *B.P.*, XLIII, pl. II, 6—Monte Salia.
[3] e.g., *B.P.*, XXXVI, pl. XII, 4.
[4] *M.A.*, XVIII, p. 651.

I were round or oval rock-cut chambers. The tombs either opened directly on to the face of the cliff or were entered by a short descending passage or simple pit, as in Eubœa (Fig. 19, 2 above). Sometimes two inter-connecting chambers occur. Access to the funeral chamber was had through a small door or window, square or tapezoidal in shape, with the edges rebated to receive the large stone that sealed the tomb. Where, as at Monte Salia, the rock was too friable to provide a secure frame for the closure slab, the window was cut in a specially prepared block of hard stone, which was then placed in the wide mouth of the grotto.[1] Such a device at once recalls the holed

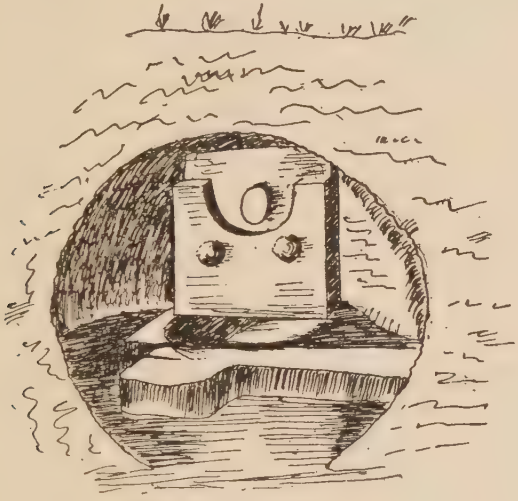


Fig. 47. View looking into a Siculan I tomb. Castelluccio.

stones of the megalithic covered galleries. In one case at Castelluccio the slab closing the tomb was carved with spirals in relief.[2] Even more remarkable were the two slabs blocking the door way to the inner compartment of tomb 22 in the same necropolis ; for, when placed in position as in Fig. 47, the two combine to reproduce roughly a conventionalized human form like the goddess who presides over many megalithic tombs and rock-cut graves in France (cf. Fig. 137 below).

The Siculan tombs were collective sepulchres and might contain as many as a hundred corpses. The dead were placed in a squatting attitude as if seated at the family banquet, and

[1] *B.P.*, XLIII, p. 17, fig. 6. [2] *B.P.*, XVIII, pl. VI.

the remains of the feast have been found scattered about on the floor. Finally, in addition to rock-cut chambers, two megalithic cists had been built at Monte Raccello, with a square window cut in one of the supports.[1]

The Ægean inspiration of the copper age cultures of Sicily and Lower Italy seems on the first glance obvious. In Sicily it was attested by the religious symbols, by bone ornaments of Troadic type, and by the hour-glass mugs. All this points to direct trade with the Ægean. On the mainland the inspiration may have partly been transmitted by Thessaly, but the pottery, the mace-heads, the punctured decoration of the metal plaques all find an intelligible explanation to the east of the Adriatic. However, one school of thought would recognize very strong western influence in the chalcolithic cultures and even see in them the intermediate stages by which the greater (sic) civilization of Iberia reached the Ægean.

The metal ornaments, apart from the spectacle spirals, stone beads and perforated tusks all have parallels in French and Iberian "dolmens," even the bone knob from Monte Salia finds one isolated counterpart in Portugal, though the shape is very common at Troy. But the burial rite is the chief argument. The idea of collective burial seems to go back to palæolithic times in Western Europe. Its embodiment in rock-cut tombs very like the Sicilian and Italian began early in Spain and Portugal. A study of the tomb types would harmonize well with a gradual diffusion from Iberia and South France via Sardinia eastward.[2] And if the idea of the collective tomb came from the west, then the "dolmens," the holed-stones, the figural carving at Castelluccio, all fall into place. And intercourse with the west is proven at least for a slightly earlier epoch by the bell-beaker of Villafrati.

All this looks very plausible. But why do not bell-beakers occur in the collective tombs of Sicily and Italy as they do in Spain, Portugal and Sardinia? Why, if the use of metal was introduced from the west, did not the fine flaking of flint which characterizes the chalcolithic period in Iberia reach Sicily too? On the other hand, we have met collective sepulchres already, in Crete and the Ægean, and the very form of the Siculan tombs in Eubœa and the Peloponnese. The

[1] Peet, fig. 76.
[2] Leeds in *L.A.A.A.*, IX, pp. 30ff, and figures.

rise of Ægean metallurgy was a perfectly intelligible and logical process, the high-handled cups of South Italy and the hour-glass mugs of Sicily can be explained in the Ægean, but not in Spain, the knobs are at home in the Troad, only sporadic intruders in Portugal. Why then should not the collective tomb have originated in the Eastern Mediterranean too, and spread thence across Sicily to Iberia? That is the orthodox explanation and I believe it to be correct. Thus the chalcolithic civilization of the area we are studying reflects the spread of influences radiating from the Ægean just as might be expected. Those influences, mediated largely by maritime commerce, did not however stop short in Sicily, but reached Spain and France. The reflex of that extension may be seen in the "dolmens" and in the amber which they contain in South Italy.

The Bronze Age

A continuation of the same inspiration is the only possible explanation for the bronze age, Siculan II, in Sicily; for the tombs of the latter epoch contain a whole mass of Minoan and Mycenean imports. The graves of the bronze age are a development of those of Siculan I. The chambers are now enlarged, generally rectangular, provided with lateral niches, and in the latest examples contain only one body in each compartment. The round and square huts and the cobbled piazzas are just a continuation of neolithic town planning. But in addition we now meet a sort of palace with Minoan affinities at Pantalica. The painted pottery goes out of fashion to be replaced by a series of new wares in which the old shapes are largely reproduced. But beside these the tombs contain many imported Mycenean vases. The metal objects which characterize Siculan II are mainly of Mycenean origin, such as the bronze mirrors, the gold rings, and some of the rapiers, while other rapiers are local derivatives of Late Minoan I types.[1] On the other hand, the numerous safety pins, often of late types never found in the Ægean, reflect the influence of the continental bronze industry of Upper Italy, and the razors (Fig. 48, 2) seem a local type. The flame-shaped knives like Fig. 48, 1, may derive from Trojan forms. Thus by Siculan II Sicily had achieved an independent civilization of

[1] Evans, *Prehistoric Tombs*, pp. 108f.

its own. But the inspiration of that civilization was so clearly Ægean, so deeply rooted in Crete, that Evans suspects a Minoan colonization of the island under a Minoan prince.[1]

Having thus seen the dawn of its own civilization in Sicily, we may turn to South Italy to sketch the contemporary developments there. They are quite different. The local civilization continued in a backward way with its rock-cut tombs and its dolmenic cists for many generations. Objects characterizing the Early Bronze Age of Upper Italy (Montelius I, 2) are rare. The grave at Parco di Monaco, sometimes described as a " dolmen ", contained a flanged celt and a dagger which might illustrate that period, but on the whole it seems that the South Italian chalcolithic epoch overlapped with the first period of the bronze age further north.

Then the true bronze age began with an invasion. Near Taranto a *terramare* with all the features distinguishing the

FIG. 48. Siculan II knife and razor. Pantellaria (½).

famous structures of the Po Valley (pp. 267ff. below) has been found overlying a " neolithic " village. It contained beside typical vases with crescent handles, Fig. 49, implements distinctive of the Middle Bronze Age in Upper Italy, winged celts, safety pins, razors and sickles (Figs. 49 and 132, 2). Only in the overlying stratum were L.M. III sherds and Mycenean figurines found. Of course the older civilization was not wiped out and further relations with the North Balkans were proved by the appearance of wares decorated with punctured ribbons arranged in spiral and meander patterns as at Butmir. But culturally South Italy is now just a province of the North Italian bronze age and draws its inspiration thence, not from the Ægean.

Our summary of the cultural history of the lands to the south of the Apennine peninsula has therefore confirmed our expectations. A neolithic culture of Mediterranean or Balkanic type fertilized by Ægean inspiration produced the chalcolithic

[1] *Ibid.*; cf. *Palace*, Introduction.

civilization of Sicily and South Italy. Further relation with the Minoan-Mycenean civilization led to the growth of an independent bronze age in Sicily, but on the mainland the later inspiration was continental and the independent civilization which dawned there in the Middle Bronze Age belonged not to the Minoan tradition, but to that of Central Europe.

Chronology. An accurate absolute dating of the several periods distinguishable in Sicily would finally settle many controversies which rage about the prehistory of western Europe. Clearly the L.M. III imports in Siculan II graves fix one end of the series. The Sicilian bronze age belongs in

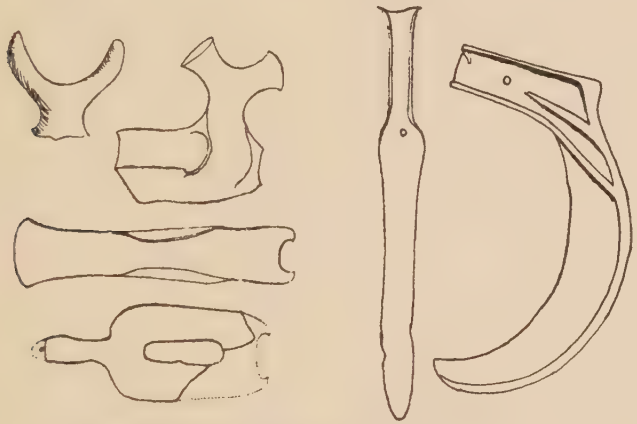


FIG 49. Vase-handles (⅔) and Bronzes (¼) from *terramare* of Taranto.

part to the period 1400-1200 B.C. The Trojan objects in Siculan I tombs give a second rather vague synchronism, but certainly take us back to the last half of the third or the first years of the second millennium. The parallelism between the motives on the neolithic pottery from Stentinello and Knossos has already been rejected as chronologically worthless. The dating of Stentinello and Villafrati will then be just a matter of spacing.

Hubert Schmidt prefers a wide spread and dates Siculan I to 2500 B.C., and Villafrati, which he does not distinguish from Stentinello, to the IVth millennium.[1] But his date for Troy II is too high and it is quite impossible to spread the thousand odd Siculan I tombs with their extraordinarily

[1] *P.Z.*, I, pp. 133ff; cf. Evans, *Palace*, p. 22, note 1.

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uniform furniture and ritual over a thousand years. Orsi estimating the rate of deposit in an untouched trench at Megara Hyblæa arrives at 2500 B.C. as the date of the abandonment of the neolithic village.[1] The stratification at Coppa della Nevigata in South Italy would favour a short chronology. In a deposit 3.50 m. deep the uppermost 1.10 m. contained Mycenean and later sherds, while the layer below, 1.70 m. thick, included sherds like beaker ware. On the whole, Villafrati need not be older than the second half of the third millennium, and Siculan I should begin about 2000 B.C., or a little later. We then get the following scheme :

Date.		Sicily.	South Italy.		
B.C. before 2400	Schmidt (3000 B.C. to 2500)	Stentinello	Molfetta huts		
2400-1900		Villafrati			
2000 to 1500	(2500 to 1500)	Siculan I	Molfetta Pulo	Chamber Tombs	"dolmens"
1500 to 1200		Siculan II	Taranto terramare		
			Mycenean imports		

AUTHORITIES

Peet, *The Stone and Bronze Ages in Italy and Sicily*. (Oxford, 1912 with many illustrations) remains the standard work. References have not been given to it.

More recent are :

(1) Von Duhn, *Italische Gräberkunde*, 1922.
(2) Gervasio, *I Dolmeni e la civiltà di bronzo nel Puglie*. Bari, 1915.
(3) M. Mayer, *Molfetta und Matera*. (Leipzig, 1924.)

For the latest excavations

(3a) Coppa della Nevigata. Mosso in *M.A.*, XIX.
(4) Molfetta : Mosso in *M.A.*, XX.
(5) Stentinello : Orsi in *B.P.*, XLI.
(6) Megara Hyblæa : Orsi in *M.A.*, XXVII.
(7) Matera : Rellini in *Riv.*, XXIII.
(8) Vibrata Valley and Capri : *M.A.*, XXIX.

[1] (6) p. 138. He distinguished four layers; a sterile deposit, .50 to .60 m. thick, representing the accumulation from the destruction of the Greek city in the fifth century B.C. to to-day ; a thin stratum with Greek remains ; and then another sterile layer .30 to .55 m. deep, under which the neolithic pottery began.

CHAPTER VII

Maritime Civilization in the Western Mediterranean

In the islands of the Western Mediterranean traces exist of an early civilization in some respects analogous to that of the Cyclades. But it exhibits many perplexing peculiarities, the significance of which in the present state of our knowledge is uncertain. The "neolithic" inhabitants of Malta and Gozo excavated complicated sepulchral galleries under ground, erected great temples of huge stone blocks, decorated their walls with sculptures in high relief, carved curious recumbent statuettes out of marble, and made some fifteen varieties of fine pottery which was sometimes painted. Later came a "bronze age" people, who cremated their dead and deposited the cinerary urns in the temples. It would take a whole book to give even the most cursory summary of the Maltese material. And then no progress would have been made. No significant parallels are at present known to the temples, the carving, the statuettes, or the pottery. Motives adorning the "neolithic" buildings and ossuaries have been derived by Sir Arthur Evans from the Middle Minoan II decorative repertoire; Professor Schuchhardt has found in the same ornaments the prototypes of the Cretan. It is still quite impossible to say whether Malta played the rôle of master or disciple among her neighbours and fruitless speculations on this topic had best be omitted.[1]

The civilization of the other islands, Pantellaria, Sardinia, Corsica, and the Baleares presents some analogies to that of Malta, but is less isolated. To illustrate it Sardinia, being the best explored, may be taken as the type. The fruitful excavations of Prof. Taramelli and others during the last ten years have gone far to disperse the darkness which shrouded

[1] On Malta, see especially Zammit in *Arch.*, LXVII, LXVIII, and LXX (Hal Tarxien); *L.A.A.A.*, III, pp. 1ff, IV, pp. 121ff; *B.S.R.*, V and VI (pottery); *J.R.A.I.*, LIV, pp. 67f (figurines); Schuchhardt, *Alteuropa*, pp. 149ff.

the prehistory of the island when Peet wrote and some account of their work is indispensable.

Sardinia contains obsidian, copper and silver and the possession of such natural resources combined with its geographical position marked it out as an early focus of trade. In palæolithic times the island was uninhabited.[1] The earliest traces of human occupation are perhaps the relics from the lower of two strata in the sepulchral cave of San Bartolomeo in the south corner of the island. They consist of simple implements of bone and obsidian, perforated wolf's teeth, and hemispherical and carinated bowls ornamented with hatched ribbons.[2] The pottery of the sepulchral grotto of San Michele (Ozieri) in the technique of its decoration recalls the foregoing, but the volute ornaments and " tunnel handles " have their closest analogies in Malta.[3] Both ceramic groups have a south-eastern air and have been compared to Early Minoan types.

In the upper stratum at San Bartolomeo the grave goods were bell-beaker ware, including Fig. 52, 1, obsidian arrowheads, daggers of West European type, awls and a flat celt of copper and a prismatic bone plaque[4] of a type common in the copper age of Catalonia like Fig. 135, 2. This material introduces us to the chalcolithic civilization of Sardinia. It is paralleled in many other caves, but is most richly illustrated in the chamber tombs of the great necropolis of Anghelu Ruju[5] which deserves detailed description.

But a word of warning is necessary. The tombs of Anghelu Ruju are collective sepulchres and as such were in use for many generations. Tombs of the same type are common all over the island and may well last almost to Roman times.[6] In one tomb at S. Andrea Priu the main chamber was a long rectangular room, $6\frac{1}{2}$ by 3 m. square. The walls and roof were carved to imitate the pillars, beams and rafters of a wooden hall, exactly as in the Etruscan *tombe a camera* which have so often been compared to examples of Anatolian sepulchral architecture. This tomb yielded no furniture,

[1] *Riv.*, XX, pp. 1f.
[2] *B.P.*, XXIV, pls. XVII 8-11, XVIII 7, XIX 1-3, 9, 11, 13.
[3] *B.P.*, XLI, pp. 102ff.
[4] *B.P.*, XXIV, pl. XIX, 18.
[5] *Not Scav.*, 1904, pp. 305ff; *M.A.*, XIX, pp. 409ff (the latter is the most important).
[6] *B.P.*, XLI, p. 16.

but smaller graves in the same cemetery contained sherds of the usual chalcolithic wares.[1] With the caution then that the tombs and their contents are only unitary if the unit is itself a large span of years, the furniture of the tombs of Anghelu Ruju illustrates adequately the character and affinities of the first connected civilization of Sardinia.

The cemetery includes thirty-one tombs which vary somewhat in plan. All were rock-cut chambers entered by a pit or a stepped passage. In most an anticella precedes the sepulchral chamber proper. The latter is normally rectangular and often connected with subsidiary chambers

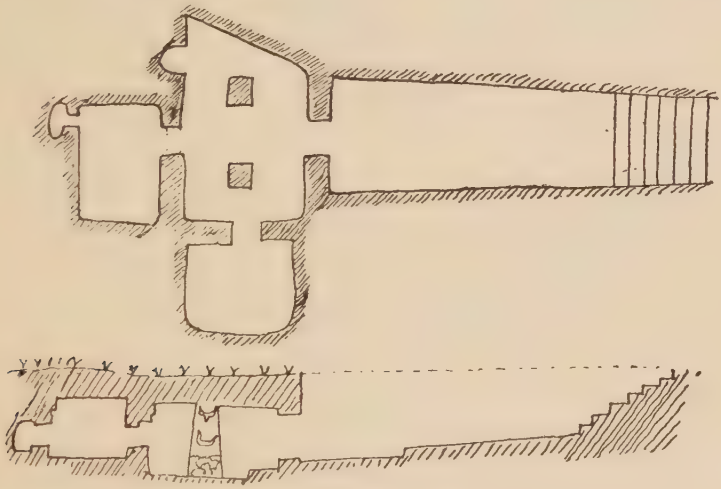

Fig. 50. Anghelu Ruju. Tomb XXbis. After M.A. ($\frac{1}{100}$).

opening from the side walls as in Siculan II tombs. Twice pillars were left in the centre of the main chamber (tombs XIX and XXbis). On the pillars or on the walls (tomb XXX) bulls' heads and high-prowed boats were carved in relief (Fig. 50). In some graves (XIX and XXIX) the walls and floor bore traces of red ochre. The usual rite was inhumation, the body lying in the contracted position, but in two chambers (XV and XXbis) cremated remains were found in small niches, while tomb XX contained a baby's body in a large jar.

Many graves had been rifled, but the surviving furniture is distinctive. Metal was rare and only flat daggers of West

[1] *M.A.*, XXV, pp. 868ff, figs. 48-50.

European type (Fig. 51), one arrow-head, one flat celt, quadrangular awls, bracelets and atypical pins of copper and olive-shaped beads and a ring of silver have come down to us. Polished stone celts were uncommon, but the rough flint picks used for excavating the chambers were lying about everywhere. Spheroid mace-heads of stone and finely-flaked arrow heads of flint, obsidian, and jaspis completed the chalcolithic armoury. Stone slips perforated at the four corners may be " bracers " as in the west or whet-stones as in Crete. The one shown in Fig. 51 is mounted on an ornamented bone plaque

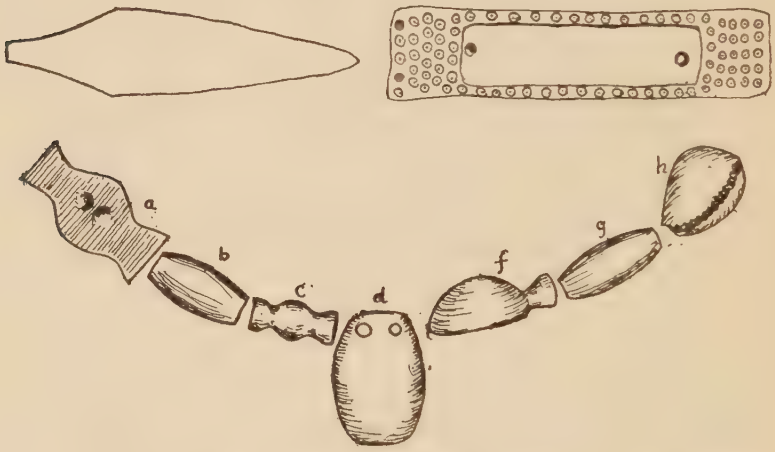

Fig. 51. West European dagger ($\frac{1}{3}$), decorated " bracer " ($\frac{1}{3}$), and necklace ($\frac{2}{5}$). Anghelu Ruju. After M.A.

For ornaments the Sardinians wore necklaces composed of discs of *Pectunculus* shells, bored tusks, axe-amulets and spool-shaped beads with V perforations (Fig. 51a) and rings and bracelets of stone.

The ceramic remains fall into four groups : (i.) bell-beaker ware and tripod and polypod bowls, (ii) sherds with a furrowed decoration of hanging loops as in Spain, Portugal and South France, (iii) unguent boxes and fragments decorated with spiral and curvilinear ribbons incised and cross hatched, and (iv) coarse monochrome ware like that found in the *nuraghis*, notably vases with nose and bridge handles like Fig. 52, 2. Finally, three tombs contained marble idols which although of local stone can only be regarded as deliberate imitations of the

Early Cycladic III type. The skulls show a mixture of races; fifty-three were dolichocephalic and ten brachy.[1]

Anghelu Ruju then reveals to us a civilization that is by no means barbarous. Its authors had well developed religious ideas, were navigators, and presumably traders. Their debt to Crete has been admirably summarized by Patroni: "Not only the form of the tombs, but also the shape and decoration of some of the vases in them recur in Crete. The symbols sculptured on the walls and the statuettes of marble show relations of a nature superior to any external relations of commerce; for they denote a profound affinity of thought and culture."[2] To supplement the archæological data Giuffrida Ruggieri has adduced anthropological evidence noting that in Crete too a short-headed minority was present by E.M. III. He goes on to infer that the island was invaded

1 2

FIG. 52. 1, Bowl, San Bartolomeo ($\frac{1}{6}$); 2, Vase-handle of nuragic type, Anghelu Ruju.

by a mixed race of Cretans at the end of the third millennium B.C. The invaders combined with some small pre-existing population[3], also of Mediterranean race, created the chalcolithic and bronze age civilization of Sardinia.

Such an invasion is highly probable, but it does not explain without remainder the chalcolithic civilization. The bell-beakers and the flat rivetless daggers and buttons with V perforation associated with them at Anghelu Ruju and in the sepulchral caves are not Minoan forms. They constitute the manifestations of a single culture and occur similarly collocated in Upper Italy, South France, Britanny, Central Europe, and above all in Central Spain. The authors of this culture were everywhere short-headed and everywhere sought out precious

[1] *M.A.*, XIX, p. 533.
[2] Quoted by Giuffrida Ruggieri in *Archivo per Antropologia ed Etnologia*, XLVI, p. 18.
[3] I do not know what archæological material would be attributed to these.

metals and copper ore. The bell-beaker is most common in Spain and there too the stone bracelets have a long history. All this obliges us to recognize in Sardinia beside the Ægean another element which may provisionally be called Western.

With the latter are perhaps to be connected the megalithic tombs of the island, which are in part contemporary with the rock-hewn graves. The most typical of these are the Giants' Tombs which approximate in form to a covered gallery with the holed-stone entry flanked by horn-like walls. Occasionally pillars with breast-like reliefs stand inside or in front of the tombs.[1] Typologically the Giants' Graves would represent a late stage of megalithic architecture, though to Elliott Smith they are early in the series. Their furniture[2] too belongs to the full bronze age. For that period it is agreed that the Giants' Tomb was the burial place of the chief whose subjects buried in rock-hewn chambers near by. The Giants' Tombs then, are later than the typical graves of Anghelu Ruju. But they are linked by a continuous series to the simple dolmens with a single capstone which also occur in the island.[3] If that series is not one of degeneration and the " dolmens " are not really megalithic cists as in the Pyrenees, these may go back to the chalcolithic period or even earlier.

Whatever were the cultural elements that composed it, the civilization of Sardinia in the chalcolithic epoch must have been a potent factor in the opening up of Western Europe. Sardinia was a focus upon which Ægean and western influences naturally converged and from which they radiated to South France and Upper Italy. The association of bell-beakers with polypod bowls which are foreign to Spain, both in South France and in Central Europe looks as if the bell beaker folk in both areas had come by way of Sardinia. The stone bracelets and spheroid mace-heads common in France and North Italy may also have been inspired by Sardinian models. Sardinia may have been the centre whence pottery ornamented with furrowed loops reached the South of France. It is less easy to say whether the funeral goddess of the French megaliths came the same way. The pillars from the Giants' Graves look like degenerations, but the chalcolithic civilization of the island

[1] Pinza in *M.A.*, XI, figs. 139-140 ; *Not. Scav.*, 1915, p. 117.

[2] Including flanged celts, bronze axe-adzes and double axes, votive barques, etc.

[3] *B.P.*, XLI, p. 15.

was far ahead of anything which arose in France till the iron age and the marble statuettes of Anghelu Ruju do represent, albeit on a small scale, a funeral deity.

The later nuragic civilization sprang directly from the chalcolithic, but it is an insular phenomenon which does not seem to have exercised any powerful influence on the course of European prehistory. It may therefore be dismissed in a few lines. The *nuraghis* were the castles of the war-like chiefs of the Sardinian clans built of megalithic blocks on the same principle as the beehive tomb. They were located by preference at strategic points and under their shelter clustered the pit-dwellings of the prehistoric peasants and herdsmen.[1] Near by were sacred edifices often partly subterranean and built on the plan of the corbelled vault. By its baetylic columns, its tauromorphic deity, its votive doves and barques, its lustral basins and sacred horns, the cult conducted in the nuragic shrines reveals its affinity with the Minoan religion.[2] But many elements have already manifested their presence in the tombs of Anghelu Ruju. The religion of the nuragic age is just the natural outcome of that of the chalcolithic. But that does not annul its affinity with the Minoan, but only confirms the real presence of a Minoan element in chalcolithic times.

The civilization called nuragic itself endured till the colonization of the island by the Carthaginians in the fourth century B.C., but its beginnings must go back almost to the period of Anghelu Ruju. However even the oldest core of the *nuraghi* of Palmavera contained riveted daggers and massive bronze rings later than anything traceable at Anghelu Ruju.[3] A lower limit for the formation of the mature nuragic culture may be given by the appearance of the Shardana in Egypt under the XIX-XX dynasties. The votive statuettes of warriors common in the nuragic age correspond remarkably to the representations of the invaders given on the Egyptian monuments. Few Egyptologists are prepared to admit the western origin of the Shardana, but Taramelli and others have made out a powerful case in favour of the identification.[4]

[1] *B.P.*, XLI, pp. 123ff. *Riv.*, XX, pp. 10off. Continued intercourse with Crete is demonstrated by the importation of Minoan copper ingots.

[2] *Not Scav.*, 1922, pp. 300ff.; *M.A.*, XXV, pp. 8ff.

[3] *M.A.*, XIX, pp. 266ff, and fig. 15.

[4] e.g., *B.P.*, XXXIX, pp. 100ff; *Riv.*, XX, *l. c.*; Giuffrida-Ruggieri, *loc. cit.*

In that case the nuragic civilization must have been fully developed by the XIVth century. Even so the beaker-period as represented by Anghelu Ruju cannot be put much before 2000 B.C.

The *nuraghis* of Sardinia find a parallel in the *talayots* of the Balearic Isles while the *navetas* correspond to the Sardinian Giants' Graves. The recent excavations[1] of the Institute for Catalan Studies have shown that the *talayots* like the *nuraghis* belong to the Late Bronze Age, and illustrate a peculiar culture of only local significance. But in the Baleares too the roots of civilization must go back to the copper age and its foundations were the same as in Sardinia. The Ægean inspiration is represented by an imported jug of Cycladic matt-painted ware[2] while bell-beakers denote a current from the west.

So we see that the isles of the western Mediterranean reflected for a short space the light of Ægean civilization among their benighted neighbours. And then they became shut in themselves, insular and exclusive, played no further part in the transmission of civilization to Europe, and eventually fell a prey to orientals.

[1] *Anuari*, 1916-20, pp. 561ff. *P.Z.*, XV, p. 119.
[2] I owe the reference to Mr. Forsdyke.

CHAPTER VIII

The Civilizations of the West

In the previous chapters phenomena have been encountered which seem to presuppose the existence of an original centre of civilization in the west. Some authorities attribute to this centre located in the Iberian Peninsula a creative activity to which even the Ægean was deeply indebted. Iberia is thus the centre of the conflict between occidentalists and orientalists. The continuity of palæolithic civilization in that area has been emphasized in chapter I. It remains to sketch the subsequent developments to enable the reader to judge between the contentions of the rival schools.

In the region occupied in palæolithic times by the Capsian culture (the northern part of the peninsula must be dealt with in chapter XVIII) three cultural provinces are distinguished. Naturally the boundaries between them fluctuated, but the distinction between the Almerian culture in the south-east, the central culture, and the megalithic culture of Portugal and North-west Spain is helpful at least in the first period (Maps I and II). The civilization of each group passes through three or four main chronological phases called by Spanish archæologists the neolithic, early chalcolithic, full chalcolithic, and early bronze ages. These divisions are based entirely on typological considerations. Where stratification does occur as at Velez Blanco it has not been observed in the publications.

The basis of the division is the typological series through which the megalithic tombs evolved and decayed. To render the following pages intelligible therefore the typology usually adopted must be sketched. The simplest and oldest form of megalithic tomb is called a dolmen. It is a rectangular or oval chamber built of three or more huge upright blocks of undressed stone covered with a single capstone or table (Fig. 53, 1 A). At an early stage in the evolution two or more upright slabs were added to form a rudimentary corridor of

access, which might be covered with a second monolithic capstone (IB). By an enlargement of the primitive cell to a round or oblong chamber and the prolongation of the corridor we reach the passage grave or passage dolmen (*dolmen à*

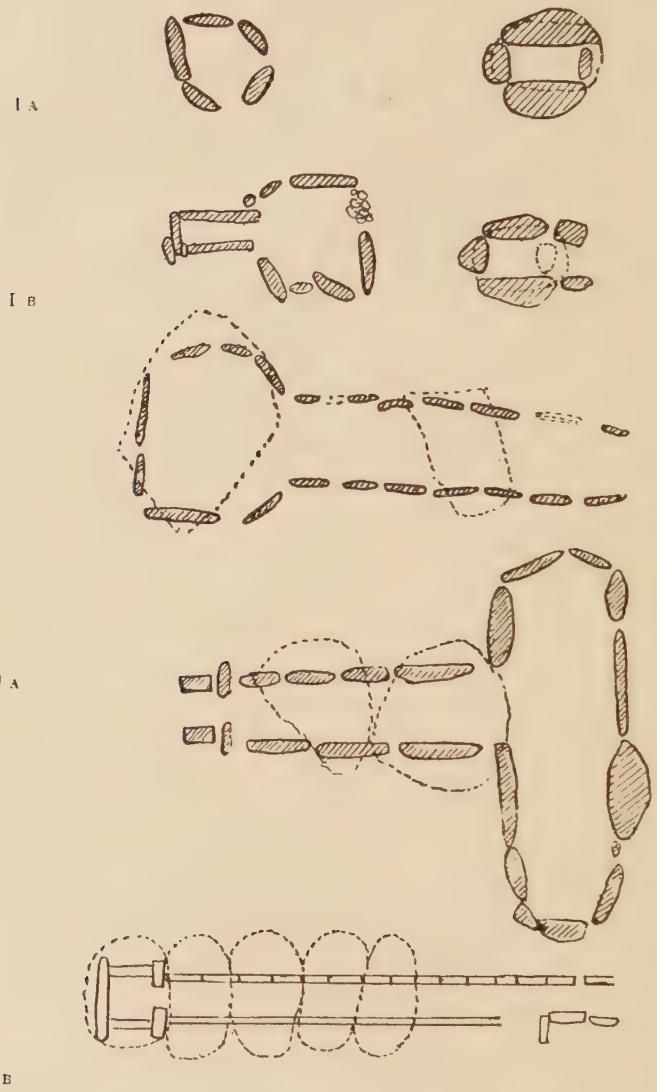

FIG. 53. Evolution of the megalithic tomb. 1, 3, 5, Portugal; 7, Spain; 2, 4, 6, Denmark.

gallerie, Ganggrab,) (Fig. 53, IIA). At this point degeneration set in. Through a desire to economize labour the corridor came to be used for interments as well as the chamber and so the functional distinction between the two members was obliterated. The passage grave then degenerated through the intermediate stages shown in Figs. 53, IIB and 54, IIIA to the covered gallery or long stone cist (*allée couverte, Steinkist*) like Fig. 54, IIIB. Finally the gallery itself shrank, leaving at length just the megalithic cist which can only be distinguished from the dolmen by its furniture. The degeneration forms are

FIG. 54. Degeneration of the megalithic tomb. 1, Portugal; 2 and 3, Sweden.

often subterranean and at least in Denmark even dolmens and passage graves were covered by a barrow. In some countries, particularly France, Germany and Sweden the covered galleries are often entered by a holed-stone (Fig. 54).

All megalithic tombs were collective sepulchres and not only contain a multitude of corpses, but also show evidences of a regular funeral ritual such as has been described for the Cretan beehives. Again nearly all megalithic tombs show curious cup marks on the uprights and capstone and often exhibit painted (as in Spain and Portugal) or engraved signs of ritual significance and possibly palæolithic descent on their walls.

The typological series described is proved beyond cavil to represent a real chronological sequence in Scandinavia. Elsewhere its validity as a chronological criterion is less certain. For instance it is now held that in Eastern Germany the megalithic cist was evolved out of the dolmen without the intervention of the passage grave or covered gallery at all. However both Bosch Gimpera and Obermaier[1] have adopted the Scandinavian typology as a basis of division in the Iberian peninsula and we must follow them.

The Neolithic Period

The centre of dolmenic architecture in the peninsula was on the Atlantic coasts of Portugal and North-west Spain. Simple dolmens and those with a rudimentary corridor are assigned to the neolithic epoch. The former have yielded no remains and their very existence is questionable. Even the primitive passage dolmens contain an extraordinarily poor furniture. Bosch Gimpera assigns to them simple celts with oval cross section, transverse arrow-heads, like Fig. 2, flint knives with unilateral retouching, shell bracelets and small round-bottomed pots. Like the Egyptians of the early dynasties the neolithic inhabitants of Portugal lavished all their energies on building tombs. The neolithic settlements are scarcely known and so our picture of neolithic civilization in Portugal is very fragmentary.

We are better informed about Almeria. There, too, transverse arrow-heads attest the survival of palæolithic traditions, but the neolithic civilization appears before us fully formed with agriculture, domestic animals, pottery, and polished stone celts. The neolithic people occupied hill tops and lived in round pit-dwellings.[2] The superstructure was of pine-wood suggesting a moister climate than rules to-day. The neolithic Almerians made rough pottery without any decoration or handles. A large jar, like Fig. 55, 3, with a rather pointed base, recalls the shapes met in the shell-heaps of Denmark, but even it has a distinct neck and another globular vase with a short cylindrical neck[3] is even more advanced.

[1] (2), (5) The divisions of the two authors do not exactly coincide.

[2] *R.Q.S.*, 1893, p. 508. El Garcel. Siret speaks of "silos" too, but what these were is not evident.

[3] (7) pl. II, 57 and 58.

A flat stone idol like those of Fig. 10, 14 from Troy, shows that the religious conceptions of the inhabitants of South-east Spain in the stone age were akin to those of the Ægeans. Hæmatite found in one hut indicates that the Almerians painted their persons. For ornaments they wore necklaces of discs of *Pectunculus* shell and bracelets of shell or white lime-stone. Their burial rites are uncertain. According to Siret the dead were interred in caves, but Bosch Gimpera assigns to this phase the trench graves of Palaces. On the whole it is difficult to regard the Almerian culture as a mere continuation of the epipalæolithic. Siret definitely treats it as intrusive and Bosch Gimpera accepts his view to that extent.

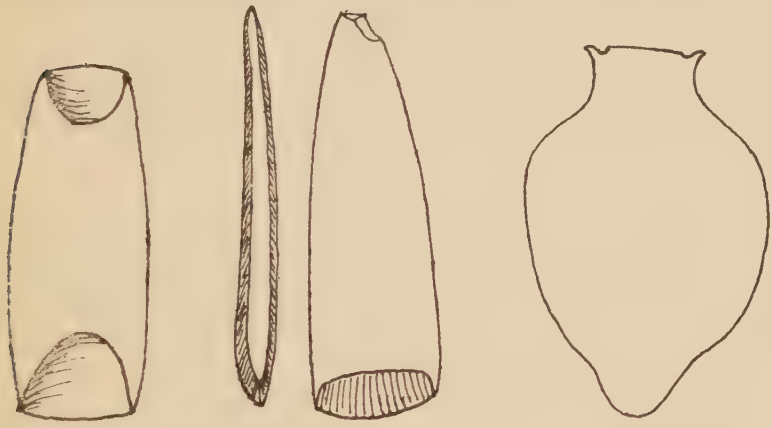

FIG. 55. 1, El Garcel ($\frac{1}{4}$); 2, Schist, Portugal ($\frac{1}{2}$); 3, El Garcel ($\frac{1}{8}$).

The oldest neolithic culture of the central region is supposed to be represented by settlements and burials in caves extending from Gibraltar and Granada to the province of Logroña and Catalonia. In many ways the cave culture is doubtless a continuation of the epipalæolithic culture of the Capsians. But the high antiquity assigned by Bosch Gimpera to the cave material is rendered doubtful on the one hand by the gold diadem of good chalcolithic type from the cave of los Murcielagos (Granada)[1] and the stone vases of Boquique,[2] on the other by the fact that the conventionalized cave

[1] (3) p. 76, fig. 77; cf. the bronze age group from Montilla (Cordova) in *Anuari*, 1920, p. 540.

[2] *Anuari*, 1920, p. 514.

paintings that testify to the continuance of the Capsian tradition themselves represent objects of chalcolithic date.

Little is known about the life of the troglodytes. The bones of game and also of some sort of swine and cattle have been found in the caves, but it is uncertain whether any were domesticated.[1] Mill-stones from Boquique may mean agriculture, but that again is uncertain. The stone industry of the caves is poor, but stone bracelets are found as in Almeria. On the other hand the cave people decorated their vases in contrast to the inhabitants of the coastal regions.[2] The ornaments include plastic strips and mouldings, incised lines, points, and strokes and furrowed arcs such as occur at Anghelu Ruju and also in the passage graves of Portugal. Esparto grass sandles and garments were found at los Murcielagos, but these objects turn out to be Peruvian.[3] Besides the caves a neolithic village of pit-dwellings containing the bones of horses and other animals was found in the central province near Madrid.[4]

Early Chalcolithic Period

Rich veins of copper ore exist in Spain and Portugal and so it is likely that the use of metal began early in the Iberian peninsula. Bosch Gimpera assigns to the early chalcolithic period some mature passage graves of Portugal although very little copper has been found in them. He takes as characteristic for the period celts of fibrolith, jadeite and similar unusual stones, arrow-heads with concave base or rudimentary tang, the typical carinated bowls, and a little incised ware like that of the caves. The Portuguese passage graves being large and containing many successive interments undoubtedly overlap with the full chalcolithic period. It is therefore quite uncertain whether the Catalan professor is right in thinking that finely worked flint daggers, beads of calläis, plaque idols, buttons with V perforation and other objects which were certainly current in the full chalcolithic period actually began to be used before it.[5]

[1] e.g. (3) p. 63; Cueva de la Mujer, Granada.
[2] See (10).
[3] *G.J.*, XL, p. 198.
[4] (9) p. 15, note 1.
[5] Thus many passage graves contain beaker ware; that of Ante Grande da Ordem contained with plaque idols a bone pin identical with some from Los Millares (1), p. 97; cf. also Leeds (4), p. 220.

Nor is the early chalcolithic period in Almeria any better defined. The fortified village of Parazuelos[1] looks very like a poor edition of the chalcolithic acropolis of Los Millares and the copper implements are the same only fewer. Siret[2] recognizes a second phase of the neolithic age, but assigns to it no metal. He says that the pottery of the later phase was superior and the stone idols better shaped. The transverse arrow now developed into a triangular type with concave base and segmented bone tubes were added to the old series of ornaments.

For the later neolithic or early chalcolithic period of Almeria collective and individual burials are attested. At Puerto Blanco eight or ten bodies lay in a trench with rounded corners walled with small stones, and at La Pernera a non-megalithic cist was found.[3] On the other hand the early settlers at Velez Blanco[4] were buried in small polygonal cists, each designed for one skeleton, surmounted by a barrow. These graves resemble those recently found by Franchet in Central Crete and to a lesser degree the neolithic tombs of Molfetta in South Italy.[5] No attempt can be made to distinguish this period in the Centre. In Almeria the skulls belonged to members of the Mediterranean race.

The Full Chalcolithic Period

So far the three cultures developed more or less independently with little relation among themselves. The chalcolithic period on the other hand saw the breaking down of cultural frontiers, a flood of foreign imports, and many innovations which seem to reflect inspiration from abroad. In Portugal the later phases of the passage graves and the earlier degeneration forms belong to this epoch, but new tomb types were introduced on the Atlantic coast while the later megaliths spread into Central Spain and even across Andalucia to Almeria. It is better therefore to describe the new phenomena which are common to the whole southern part of the peninsula together.

[1] (6) p. 45.
[2] (7) chief types illustrated on pl. III.
[3] (7) (6) pp. 31ff.
[4] (8) p. 72, fig. 35.
[5] The cist burials with allegedly cremated bones from Parazuelos sound suspiciously late.

The new tomb types are the corbelled beehives and rock-cut chambers. The former are complicated structures often provided with subsidiary chambers and long corridors. In this respect they are more like the Late Minoan tombs of the Peloponnese than the Early Minoan corbelled vaults of Crete. And, as in the Peloponnese, they were usually built into the side of a hill though some at Los Millares seem to have been

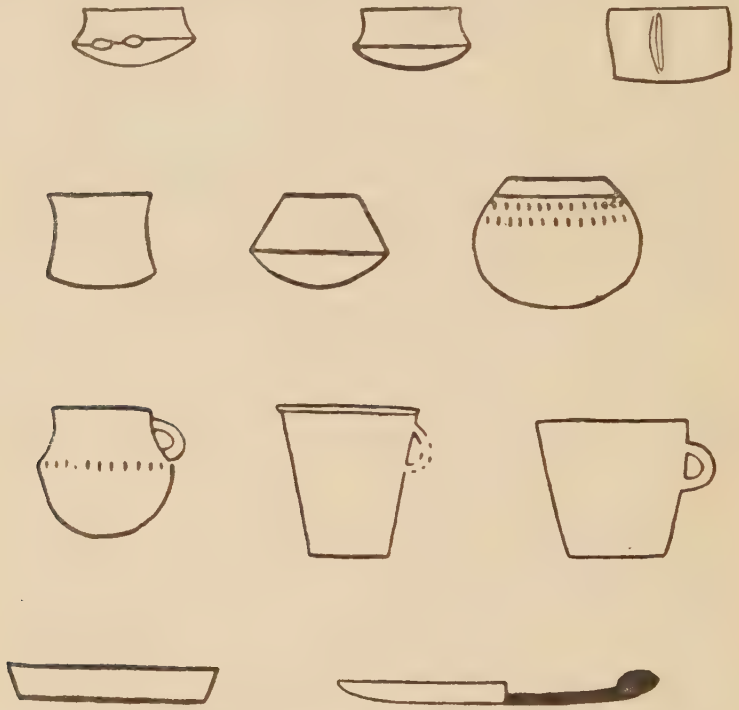

Fig. 56. Pottery of Portuguese passage graves. After Leeds ($\frac{1}{8}$).

covered by a specially erected barrow with projecting arms in front like certain Scottish cairns (cf. Fig. 141). The only Iberian examples of a holed-stone entry are found there and at Gor in Granada and the same tombs exhibit the unique feature of a central pillar.[1] The beehives are found both in South Spain and in Portugal and are marked on the accompanying map III. The rock-cut tombs generally have round chambers, often two in series like Siculan I graves. They are

[1] (5) figs. 2, 4 and 5.

restricted to Portugal where they seem contemporary with the beehives and may, as Leeds[1] implies, have developed out of the latter.

The contemporary settlements were built on fortified hills. In Almeria they were carefully laid out and at the type station of Los Millares an aqueduct had been constructed to assure the water supply of the citadel. On the coasts of Portugal the contemporary stations were less elaborate and the occupants dwelt in round huts of wattle and daub.[2] But the attached necropoleis were not made up of the old megalithic tombs, but of rock-cut chambers or beehives.

The people who dwelt on the acropoleis and built the beehive tombs used copper freely. In Almeria and Sevilla flat celts, flat daggers of West European type as in Fig. 51, quadrangular awls, saws and arrow-heads of copper are common. In Portugal metal is much more rare. It is quite exceptional in the passage graves[3] and even in the chamber tombs and beehives its use is almost limited to the curious arrow-heads of Fig. 57, 2, and to awls. Contemporaneously with the general use of metal went a revival of the flint technique. The flaking of the chalcolithic daggers and arrow-heads is as good as anything achieved by the palæolithic Solutreans. The fine flints are commoner in Portugal and occur as much in the passage graves as in the newer types of tomb. The exquisite arrow-heads of Fig. 57, 1, are a Portuguese speciality, while in Almeria the tanged type like Fig. 57, 5, was preferred. The triangular blades of Fig. 57, 3-4, are likewise more common in the west, though examples are known in Almeria. They were perhaps hafted at right angles to the shaft for use as halberds.[4] The habit of polishing the face of the weapon is found outside Portugal only in Ireland.

The chalcolithic age was further a period of great commercial activity which brought to Iberia a multitude of foreign articles. The tombs and settlements in Almeria contained combs, pins, and small flasks of ivory, a cylinder made from the tusk of a hippopotamus,[5] beads of ostrich shell

[1] (4) p. 228.

[2] *O.A.P.*, XI, pp. 40f (Chibannes near Palmella); *ib.*, XX, pp. 115ff.

[3] (4) p. 220.

[4] H. Schmidt, *Der Dolchstab in Spanien* in *Opuscula archaeol. O. Montelio dicata.*

[5] (7) p. 33.

and plaster vases imitating ostrich eggs, and unguent flasks of alabaster, which betoken intercourse with the east of the Mediterranean. On the other hand, jet and amber must have come from the north and a wealth of gold and calläis[1] shows that the native resources of the land were being fully utilized. The tombs in Sevilla are poorer, but gold, ivory and the shell

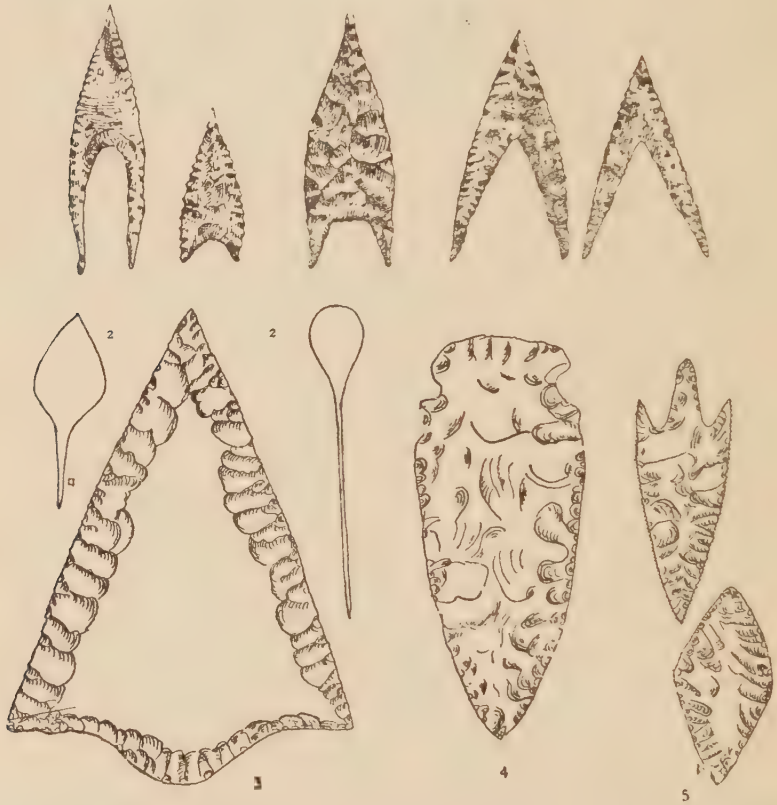

FIG. 57. Chalcolithic types. Flint: 1, Alcalar ($\frac{1}{1}$); 3, Casa da Moura ($\frac{1}{2}$); 4 and 5, Los Millares ($\frac{1}{2}$); Copper: 2, Palmella ($\frac{1}{2}$).

of *Dentalium elephantinum*[2] a Red Sea shell, do occur. In Portugal oriental objects are less common, but ivory pins and imitations of them in bone as well as unguent flasks occur—

[1] A green stone rather like turquoise. It is also common in Britanny and occurs sporadically in South and Central France. Its Spanish origin is by no means certain. Indeed it has not yet been found in the natural state.

[2] (7) p. 451.

principally but not solely in the beehives or chamber tombs. Amber and calläis are found in passage graves and with the addition of jet and gold also in the beehives and rock-hewn tombs. Poor reflections of trade with the Ægean may be recognized in a segmented stone bead of E.M.II type from Palmella,[1] in an ivory knob of the type (like Fig. 28, 3) familiar in Troy and Sicily from Nora, and perhaps in the spool shaped beads with V perforations[2] that resemble specimens from Anghelu Ruju in Sardinia (Fig. 51a). Finally a case of trepanning from the sepulchral cave of Casa da Moura[3] may reflect intercourse with South France where that operation was frequently performed.

Their foreign trade may have stimulated the spiritual life of the inhabitants of the Peninsula; for in the chalcolithic period myriads of curious religious objects were manufactured. An isolated flat idol of stone, like those from the Cycladic and Sardinian graves, from Almazaraque (Almeria[4]) and a tauromorphic vase from Gorafe (Granada[5]) may indicate the source of the inspiration. Much more common were idols made from the phallanges of animals painted to suggest a human face (Fig. 58, 1). The phallange idols are a Spanish type, but are met in Portugal in the beehives[6] and in the rock-cut tombs of Palmella. In Portugal the commonest types, both in the megalithic tombs and in beehives and rock-cut chambers were flat schist plaques (Fig. 58, 2), and stone cylinders or half-cylinders (Fig. 58, 3). Schist croziers and marble imitations of a hafted hoe—or perhaps a Mesopotamian battle-axe—(Fig. 58, 4) illustrate further elaborations of the funeral cult. Such objects are proper to the Atlantic coasts, but undecorated plaque idols and croziers are known from Almeria. All these ritual objects, derived exclusively from tombs, show how elaborate the cult of the dead must have become.

The pottery of the chalcolithic period is also novel. In Portugal indeed the later megalithic tombs contain vases of the types shown in Fig. 56, which carry on the neolithic tradition. In Almeria some sherds with designs in red paint

[1] *O.A.P.*, 1907, fig. 381b.
[2] (3) p. 102, fig. 112.
[3] (3) p. 85.
[4] (7) p. 35, fig. 83.
[5] (7) pl. IV, 43.
[6] e.g., at Alcalar (1) and San Martinho, *O.A.P.*, II, p. 211.

FIG. 58. Religious symbols. 1, Almazaraque; 3, Andalucia; 2 and 4, Portugal ($\frac{1}{4}$).

said to represent a conventionalized cuttle-fish are something absolutely isolated in the Peninsula.[1] But the characteristic pottery of the epoch both in Almeria, Sevilla, and Portugal was that of the bell-beaker group.

This ware is always fine, slipped, and polished. It varies in colour from red to deep black. The ornament is either executed with a sharp pointed instrument giving a continuous line or by means of a toothed wheel which when rolled along the surface of the vase produced a series of points which almost run into one another. The designs themselves are arranged in horizontal bands or radiate from the bottom of the vessel.[2] The typical shapes are beakers of varying dimensions and hemispherical bowls and dishes (Fig. 59, 1 and 2). In Sevilla cups with high hollow feet were also manufactured. Though this pottery is diffused throughout the whole of the peninsula and to many parts of Europe (Map III) nowhere is it found in such quantities and with such variety of shapes and ornaments as round Carmona in Sevilla. Indeed there is no doubt that the centre of fabrication was located there.[3] Del Castillo would derive the technique of beaker ornament from that of the neolithic pottery of the caves. It is in any case to be remarked that vases of this class are often decorated with stylized figures of animals as in our Fig. 1, d. Such designs seem to carry on the epipalæolithic tradition[4] and may justify the attribution of the beaker pottery to the authors of the cave culture.

The general outlines of the chalcolithic cultures as they appear in the southerly coastal regions have now been sketched. The problems which they raise must be reserved for a special chapter. It remains to emphasise some local peculiarities of the period in the several regions.

In Portugal I must insist that genuinely megalithic tombs were being built alongside the new beehives and artificial grottoes. Some of the later passage dolmens have a furniture so like that of the newer types of sepulchre that an overlapping seems probable, just as the covered galleries are

[1] (7) pl. VI, 1. On p. 37 incised fragments filled with blue substance are mentioned.

[2] The simple hatched parallel bands of fig. 59, 3-4, are found in Portugal, Andalucia, the Pyrenaic region, Britanny, Sardinia, and Sicily, but not in the northern part of Central Spain.

[3] (4) p. 224; *L.A.A.A.*, ix., p. 36.

[4] (9) Figs. 10, 16, 17; (4) p. 227, fig. 13.

partially contemporary with the strange tombs. On the other hand the fact that finely worked flints, amber and other innovations are found in passage dolmens without bell-beaker ware, may mean that these novelties antedate the full chalcolithic period as revealed at Palmella and Los Millares. Finally the use of natural caves for sepulchres continues from the neolithic period.

FIG. 59. Bell-beakers. 1 ($\frac{1}{8}$) and 2 ($\frac{1}{6}$), Palmella; 3, La Halliade, France ($\frac{1}{8}$); 4, Villafrati, Sicily ($\frac{1}{2}$).

The peculiarities of the beaker culture in the central province deserve more special mention. The beaker folk in Sevilla dwelt in large round huts and seem to have been settled agriculturalists since they dug large store pits and manufactured saw-like flint flakes to serve as the teeth of sickles.[1] Moreover besides the megalithic tombs the beaker folk round Carmona also made separate graves and even cases of cremation are

[1] *R.A.*, 1899, pp. 316ff.

reported.[1] Further north at Ciempozuelos, near Madrid, some fine beakers were found apparently with skeletons buried in separate earth graves. The skulls were markedly brachycephalic.[2] With them lay a very short West European dagger, exactly like the one from Bohemia shown in Fig. 86, 2. The discovery of a brachycephalic race associated with bell-beakers and copper daggers in non-megalithic earth graves in Spain is of the utmost importance ; for we shall meet the same people all over Europe as we have already in Sicily and Sardinia searching for gold and precious stones and copper ore.

In Central Spain the bell-beaker culture seems to have taken up the whole of the northern part of the province. Map III shows its distribution and how beakers occur quite outside the megalithic region.

Finally in Almeria, while the standard chalcolithic culture was that represented at Los Millares and in the collective tombs, it has other aspects. At the fortified settlement of Velez Blanco, the Almerians did not build collective tombs, but continued to bury the dead individually in small cists. Though copper daggers and awls, fine flint arrow-heads and halberds, phallange idols and beads of calläis were in use, the masses of foreign imports that flooded the markets of Los Millares and Almazaraque did not reach the more inland station. Moreover the Almerian culture in its older form extended its sway in the chalcolithic period all along the eastern coast across Valencia into Catalonia and up the Ebro as far as the territory around Solsona and the plain of Vich. There non-megalithic cist tombs with their calläis beads, polished celts of fibrolith, fine flints and bracelets of *Pectunculus* shell mark in the words of Bosch-Gimpera "a veritable extension of the Almerian civilization."[3]

We should then perhaps distinguish no less than four cultural groups in the full chalcolithic age—the innovating civilization of Los Millares and Palmella with its fortified stations, beehive tombs and artificial grottoes, the continuation of the older megalithic culture of the west, the bell-beaker civilization of the centre, and the archaizing Almerian culture of the east. And the copper age must have lasted a long time

[1] (1) pp. 120f, and *Anuari*, 1920, p. 525.
[2] *Bol. R. Acad. Hist.*, LXXI, pp. 22ff.
[3] *Anuari*, 1920, p. 472 ; cf. *ib.* 1914, p. 806 (S. Genis de Vilassar trench grave).

as the number of tombs and the multitude of corpses contained in them demonstrate.

The Early Bronze Age

In Portugal the megalithic culture outlasted its extensions to the south-east. Beyond all doubt some Portuguese megaliths such as the decadent galleries of Odemira and Agua Branca are contemporary with the better-known bronze age culture of El Argar on the east coast; for they contain flat celts with expanding blades and riveted daggers of bronze age type.[1] The same remark applies to the rich beehive tomb No. 3 at Alcalar, which contained curious daggers with distinct midribs as well as calläis, amber, and ivory.[2] Even later were a burial at Redondas[3] in a very decadent gallery and a series of small cists from Algarve. But all these remains are concentrated in the south of Portugal, and seem an evident continuation of the chalcolithic civilization of that region. Thereafter there is a complete blank. No connected finds corresponding to the Middle Bronze Age of Central Europe exist to fill the gap between the copper age and the age of iron. Indeed at Outeiro da Assenta a layer containing Late Iron Age remains—La Téne II fibulæ and the like—is immediately superimposed upon the chalcolithic stratum.[4] So at Chibannes no intermediate deposit separates the strata with beaker ware from those of Roman times.[5]

In the area of the beaker culture in Central Spain remains even of the early bronze age are almost entirely absent save in Andalucia[6] and nothing connected meets us till the ninth century. Only on the east coast is a fully developed bronze age civilization attested. It is best known from the acropoleis and cemeteries of El Argar, Fuente Alamo and El Officio in Almeria[7] and the exactly parallel necropolis of Orihuela[8] in Alicante.

On the Mediterranean coast the bronze age people still lived on precipitous hills protected now by very substantial

[1] (1) pp. 106f. and 117.
[2] (1) p. 104 and fig. 141.
[3] (1) p. 84.
[4] *O.A.P.*, XX, pp. 116f.
[5] *ib.* XI, pp. 40f.
[6] e.g., Los Eriales, Granada, *R.Q.S.*, 1893, pp. 551f.
[7] (6) on which the following remarks are based.
[8] (1) p. 141, *Bol. R. Acad. Hist.*, LIV, pp. 357f, with figures.

walls of unhewn stone. Stepped galleries leading under the walls to springs recall architectural peculiarities met at Troy, Mycenæ and Athens. The bronze age houses were rectangular, possessed several rooms and possibly even second storeys. Flint and stone were now rare and poor bronze[1] was used both for tools and weapons. The products include flat celts splayed out at the blade and a few with low flanges. The daggers are generally round-heeled with only a slight midrib and regularly show a semicircular impression left by the hilt (Fig. 60) like the Early Bronze Age daggers of Italy and Central Europe. Large rivets were known and the smaller ones were as in Early Cycladic and Minoan daggers sometimes of silver. The Almerian dagger developed into a short thrusting sword (Fig. 60). These attained a length of 60 cm. but were far inferior to the M.M. III rapiers from the Mycenean Shaft Graves. The most characteristic weapon of the Spanish bronze age was however the halberd represented by several types as in Fig. 60. It was essentially a dagger fastened on to a long shaft at right angles. As has been remarked above the halberd may be derived from the flint blades of the chalcolithic epoch.

The bronze age graves have yielded a wealth of ornaments. Silver, unknown to the copper age, was now freely employed as well as gold for the manufacture of rings, bracelets and diadems. The same objects as well as helical wire tubes were made of copper. Stone and shell were still used for bracelets and were supplemented by perforated boar's tusks carrying small rings—an ornament which recurs in the bronze age of Hungary. The beads, of fish vertebræ as in Crete, bone, ivory, calläis, gold and silver were all of simple forms ; amber was no longer in use.[2] All this might mean an interruption of foreign trade. But some segmented beads of blue paste of M.M. IIIb type (like Fig. 145), found in grave 9 at Fuente Alamo with a short sword are regarded by Sir Arthur Evans as imports from Crete. Similarly shaped beads of bone are found at El Argar, but Siret assigns the bone type to the early chalcolithic period,[3] just as segmented beads were being manufactured in stone in Crete by E.M. II.

[1] The standard proportion was seldom if ever reached and pure copper remained common.

[2] (7) p. 74 ; in the same passage Siret denies the use of calläis, but it was apparently found—e.g., in tomb 476 at El Argar.

[3] (7) pl. III, 16 and text.

Fig. 60. Burial jar, showing diadem ($\frac{1}{10}$); funerary vases ($\frac{1}{6}$), halberd ($\frac{1}{8}$), daggers ($\frac{1}{8}$) and sword ($\frac{1}{8}$). Almeria. By permission of the Trustees of the British Museum.

The bronze age pottery of Spain is undecorated save in so far as the unevenness of the firing produced an ornamental mottling as in the Vasiliki ware of E.M. II Crete. The forms are shown in Fig. 60. The carinated bowls and jars have a long history in the peninsula, but are extraordinarily like the Aunjetitz mugs of Bohemia. The pedestalled bowls may derive from similar vessels in beaker-ware from Sevilla.

No idols were found in the bronze age graves, but a plastic animal and an "altar" surmounted by horns of consecration from the acropolis have a Minoan look. By the bronze age the custom of collective burial and with it the megalithic tomb had been abandoned in Almeria. The dead were buried among the houses on the acropoleis in cists of slabs or small stones or under large jars. The bones were sometimes coloured red with cinnabar.

The graves are so numerous that the El Argar culture must have lasted a long time in South-east Spain. But it exhibited not the slightest trace of development. The Mediterranean coast has yielded no more material of Middle Bronze Age type than have Portugal or the Centre.[1] A yawning chasm seems to separate the El Argar epoch which corresponds typologically to the Early Bronze Age of Central and Northern Europe from the next group of connected finds in the mature iron age. This gap is not the least of the problems which we shall now proceed to examine.

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(1) Nils Äberg, *La civilisation énéolithique dans la péninsule ibérique.* (Uppsala, 1921.)

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(3) E. Cartailhac, *Les Ages préhistoriques de l'Espagne et du Portugal* (1886).

(4) E. T. Leeds, *The Dolmens* and *Megalithic Tombs of Spain and Portugal* in *Arch.*, LXX.

(5) H. Obermaier, *El Dolmen de Matarrubilla.* (Comisión de Investigaciones paleontologicas y prehistoricas. *Memoria* 26, 1919.)

(6) H. and L. Siret, *Les premiers âges du metal dans le sud-est de l'Espagne* (1889.)

[1] (2) p. 118.

(7) L. Siret, *Questions de chronologie et d'ethnographie iberiques.* (Paris, 1913.) (The only available complete account of the Almerian culture ; but nevertheless very subjective.)

For special areas or stations.

(8) F. de Motos, *L'edad neolitica en Velez Blanco.* (Comisión de investigaciones, etc. *Memoria* 19.)

(9) H. Obermaier, *Yaciemento prehistórico de las Carolinas.* (*Ibid. Memoria* 16.)

(10) Alberto del Castillo, *La cermica incisa de la cultura de las cuevas de la peninsola Ibérica.* (Barcelona, 1922.)

CHAPTER IX

The Orient and the Occident

The last chapter described the rise of a series of cultures in the Iberian peninsula. They attained their apogee in the chalcolithic epoch, then seem to decline in the bronze age and finally to vanish without a trace. Incidentally points of contact with the north and with the east have been noted. The influence of the Iberic cultures must then have been considerable. But the interpretation of the foreign connections is a point keenly debated. To the orientalists the cultures of Iberia are only poor reflections of the civilizations of the Eastern Mediterranean ; they may indeed have mediated between the latter and more northerly lands, but made little or no original contribution to historic progress. To the occidentalists the Peninsula was a creative and vital force which inspired not only the dwellers on the coasts of the Atlantic and the Western Mediterranean, but provided a stimulus even to the inhabitants of the Ægean isles and the Nile valley. The issues here raised are far-reaching and must be discussed consecutively under several heads.

Chronology

If an absolute chronology were established beyond cavil for the Iberian peninsula all the other problems would be automatically solved. But unambiguous criteria for dating the several periods are wanting. Siret takes up one extreme position. On the strength chiefly of the Trojan analogies of the idols from the neolithic village of El Garcel, he equates the Almerian neolithic period with Troy II. The full chalcolithic age as illustrated at Los Millares then falls within the years 1600-1200 B.C. So the beehives of Los Millares and Alcalar can be derived from the famous tombs of Mycenæ and the cuttle-fish motives painted on the vases find significant parallels in L.M. III pottery. On his view the bronze age

culture of El Argar fills up the gap from 1200 B.C. to 800 B.C., when the iron age began.

The last point is the great advantage of Siret's system. It leaves no hiatus, but brings continuity to the archæological record. But two facts seem fatal to it. The halberd from Shaft Grave VI at Mycenæ, dated about 1600 B.C., is of mature form only comparable to those of El Argar. Evans himself attributes it to intercourse with the Iberic West, of which a reflex may be seen in the segmented paste beads of Fuente Alamo. Secondly, the Sicilian evidence already cited combined with the Central European data to be adduced later compels us to place the bell-beaker period round about 2000 B.C.

Hubert Schmidt goes to the opposite extreme. As we have seen he places the Sicilian bell-beakers nearer 3000 than 2000 B.C. So he dates the Spanish chalcolithic epoch to the first and the bronze age of El Argar to the second half of the third millennium B.C. Then the silver rivets of Early Minoan and Cycladic daggers find parallels or even prototypes in the silver land of Almeria. The strength of such a scheme is that it allows the survivals of palæolithic art in Spain to be put back to an epoch not too remote from the dates assigned on geological grounds to the reindeer age.

But, apart from the weakness of the Sicilian evidence, the higher dating leaves, after the maturity of the El Argar culture, a terrific gap of over a thousand years, unrepresented in the archæological record by any connected finds. Nor should the paste beads of Fuente Alamo be ignored. If imports, they cannot be older than 1600 B.C. On these grounds I feel that a reasonable date for the full chalcolithic period would be between 2200 and 1700 B.C. The El Argar culture may then be dated from 1700 to 1200 B.C.

The Origin of the Dolmen

The problem of the dolmens and megalithic tombs is not peculiar to the Iberian Peninsula. Such sepulchres are also distributed in France especially in the south and west, Ireland, the West of Britain, Holland, Southern Scandinavia, North Germany, the islands of the Western Mediterranean, and along the Black Sea coast (Maps II-IV) with extensions to India and North Africa (the latter belonging to the iron age).[1] The

[1] Cf. *L.A.A.A.*, IX, pp. 29ff.

distribution is markedly coastal at least in the case of those types which in western and northern Europe are regarded as early. In the north, for example, simple dolmens are restricted to the coasts of Denmark, South Sweden, and Pomerania ; the passage graves are met further inland, and the area occupied by the covered galleries is even wider.

Secondly, megalithic tombs are very frequently found in regions rich in copper or tin (Sardinia, Portugal, the Cevennes, Cornwall), or gold (Portugal, Britanny, Ireland), or silver (Spain, Sardinia), or amber (Denmark). The coincidence between the distribution of megaliths and ore or precious substances is not, however, exact. They are lacking on the amber coasts of Prussia, and in Bohemia and in Almeria are definitely late despite the wealth of that area in copper and silver.

The explanations offered for the diffusion of these remarkable monuments are very divergent. Montelius,[1] followed by Obermaier,[2] Elliott Smith,[3] Perry and others, has sought the prototype in the Egyptian *mastaba*. In its form and megalithic construction the latter does bear a distinct resemblance to the simple dolmen. Elliott Smith has elaborated the idea in an attractive manner. He shows that many features of megalithic sepulchral architecture—the holed-stone, the cup-markings, the figural carvings often met on the doorway or in the antecella—find parallels and a rational explanation in the *mastaba*. However, the *mastaba* was not, like the dolmen, a tomb, but a funerary chapel erected above the actual tomb cut in the rock beneath.[4] The secondary phenomena which Elliott Smith can explain so convincingly are not universally associated with megalithic architecture, and then only with its later phases. Thus the holed-stone in Northern Europe is peculiar to the covered gallery and is never met in Denmark at all (see below, p. 280). Elliott Smith indeed has to reverse the usual typology, and regards the simple dolmen, like the megalithic cist, as a degeneration of the covered gallery and the Sardinian Giant's Tomb as an earlier stage in

[1] *Der Orient und Europa.*

[2] (5) Numbers refer to the bibliography of the last chapter.

[3] *Man*, XIII, 105 and "*The Evolution of the Rock-cut Tomb and Dolmen*," in *Essays and Studies presented to Sir William Ridgeway.*

[4] The suggestion that the passage grave is an imitation of the underground chamber seems fantastic.

the series. But the Scandinavian evidence is unambiguous. In that area the classical typology of Montelius is strictly valid. The real strength of the Egyptian analogy lies in the use of megalithic blocks.

The orientalists have also a good explanation to give of the mechanism of diffusion. They note the coincidence between the distribution of megaliths and deposits of precious substances and infer that the idea at least was diffused by voyagers in search of gold, ore and precious stones. Peake[1] calls these voyagers Prospectors. He has observed a considerable brachycephalic population even to-day in the megalithic regions and uses this fact to connect his Prospectors with the Sumerians. Perry and Elliott Smith regard the dolmen-folk as Egyptians. Perry[2] has found a motive for their expeditions in the magical properties attributed by the Egyptians to gold and similar "Givers of Life." The need of such substances explains the wide range of the treasure seekers, while the highly developed cult of the dead might render comprehensible the enormous labour expended on erecting the megalithic tombs.

These theories have one obvious defect. Neither metal nor any precious substance is found in the older European megaliths save with one significant exception. As far as Iberia is concerned all authorities, Aberg, Bosch Gimpera, Leeds and Obermaier, are unanimously agreed that the earlier megaliths are truly neolithic and that copper and gold are only found in the tombs when megalithic architecture had already passed through several phases of development. It is of course possible for Peake to argue that the Prospectors, though they were actually in possession of metal and exploiting its ores, did not initiate the natives who copied their tombs into the secret and contented themselves with leaving stone imitations of the metal weapons even with their own dead. For Perry such an explanation is hardly possible ; for his Children of the Sun were seeking precious stones and gold to prolong their own lives. To this end also the Egyptians had elaborated a system of amulets, but curiously enough the only significant beads that are met in megalithic tombs are, like the phallic beads of South France, Cycladic or Minoan, not Egyptian in type.

[1] *Bronze Age*, p. 59. [2] *The Growth of Civilization*, pp. 60f.

The exception to the rule of the absence of gold and copper from megalithic tombs must embarrass even Peake. As in Spain and Portugal, so in South France and Britanny, copper daggers and gold ornaments do occur in the later types of tomb, but always in company with bell-beakers. But the same beakers with precisely the same copper daggers and gold ornaments are found in Central Spain, in Upper Italy and in Central Europe, in simple trench-graves with skeletons buried individually in the contracted position. The beaker folk are always as at Ciempozuelos brachycephalic and did seek out metal ore, gold, and precious substances. It is they who fulfil the requirements of Peake's prospectors. But they did not regularly build megalithic tombs!

The occidentalists contend that the dolmen was the invention of the palæolithic survivors of the Atlantic region. The latter had buried their dead in caverns from the ice ages and throughout the epipalæolithic epoch. And the dolmen might be just an artificial cave. The Spanish Capsians had decorated their caves with magical paintings, including solar symbols and representations of the departed. Exactly similar paintings, only more conventionalized, adorn the walls of Spanish and Portuguese megaliths. Part of the lithic industry of the dolmens, e.g., the transverse arrow-heads, is descended from the epipalæolithic. The great centres of megalithic architecture in Europe are precisely those regions where the palæolithic survivals are most numerous and best attested.

However this thesis too has difficulties. Why are the oldest megaliths always on the coast? Why did men go to the enormous trouble of erecting artificial caves when there were plenty of convenient natural caves handy and actually in use as in Portugal[1] from the neolithic to the bronze ages? And how did megalithic architecture spread from the Atlantic coast to the Caucasus, to say nothing of India or the Pacific Islands? If the comparison drawn in Chapter II between the early civilizations of the Near East and of the West has any weight, it would be absurd to argue that the western barbarians taught the Egyptians and Cretans the cult of the dead.

Any conclusions drawn from the foregoing discussion must largely be coloured by subjective factors. Perhaps early voyagers did in fact originally introduce the idea of the

[1] (4) p. 229.

dolmen to the West. But their conceptions of the future life were not wholely strange to those of the aborigines. The latter then may have adopted the new idea together with some arts such as the polishing of stone and navigation and have spread it in a barbarized version throughout the western world. That would explain the other innovations which seem to accompany the appearance of megalithic tombs in Britain and Scandinavia.

The Corbelled Vault and Metallurgy

The origin of the beehive tombs is a different question. The corbelled structure might easily have arisen among any people who lived in round huts and used dry stone masonry. To replace the enormous capstone of the passage dolmen by a false vault of smaller stones would be sensible economy of labour. The lower courses of the early Spanish beehives are in fact built of megalithic uprights. Thus there is no necessity to regard the beehives of Los Millares as copies of those of Mycenæ nor even of the older vaults of Crete. It is equally unnecessary to make the Spanish tombs the prototypes of the Cretan as Schuchhardt does, since the required presuppositions had a circum-Mediterranean range.

However, the contents of the Spanish beehives do suggest a fresh impulse from the East. At Los Millares we have met a whole series of oriental objects. With these imports went a revival of flint flaking and the beginnings of metallurgy. The flint technique of the chalcolithic epoch in Iberia was something unknown in Western Europe since the Solutrean phase of the palæolithic age. But in Egypt it had been preserved from predynastic times till the Middle Empire. The prototypes of the West European copper dagger seem equally Nilotic. All this does suggest very forcibly that at least the inspiration of the Spanish copper age came from the Eastern Mediterranean and is to be connected with the great maritime enterprises of the second half of the IIIrd millennium. That Ægean as well as Nilotic influence reached the Iberian peninsula is obvious from the alabaster idol of Almazaraque, the segmented beads from Palmella, and the Trojan knob from Nora. With the same movement from the East the introduction of an Early Minoan and Egyptian type of funeral architecture might reasonably be connected.

I must however repeat that the synchronous appearance of all these innovations is not certainly proven. The spontaneous rise of an original metallurgy in a country so rich in copper ore as Almeria is no impossibility. Schuchhardt argues that the discovery of copper actually took place there. On the other hand, in the Iberian peninsula the use of metal began in the south-east precisely where eastern influence would first penetrate and where evidence for such influence is most richly forthcoming, and only later reached the west where the oriental objects are rare and barbarized. These considerations weight the scales against the hypothesis of spontaneous generation. The fortified settlements on the coasts of Spain and Portugal look much more like the monuments of a new people than the spontaneous creations of the natives.

Does this mean that the beaker folk also were intruders? Everyone admits that the European centre from which started the curious people who seem to have originated the use of metal and to have opened up international trade in Western and Central Europe must be located in Spain. Nowhere else have so many and varied beakers been found. But if the other European beakers came from Spain, the inspiration of the originals may have been exotic. Indeed J. R. Melida[1] has recently instituted an interesting comparison between Spanish vases and Egyptian fabrics with white paint on a red ground and with incrusted decoration on a black ground from IVth dynasty graves. The hemispherical bowl and the horizontal zig-zag ornament are common to both lands. Myres also looks to Egypt, and the tulip-shaped vases from the Badarian settlements in the Fayum both in shape and ornament would serve excellently as prototypes for the bell-beaker.

However, a perfectly good explanation is available in Spain. Both Evans and Siret have independently come to the conclusion that the bell-beaker is a translation into clay of esparto grass vessels. A. del Castillo sees foretastes of the decorative technique employed upon the beakers in the incised ware from "neolithic" caves. The conventionalized animal figures that decorate beaker ware from Velez Blanco, Las Carolinas, and Palmella link its makers to the palæolithic people of the peninsula. Short-heads go back at least to the

[1] *O.A.P.*, XXIV, pp. 24ff.

epipalæolithic period, and the beaker folk may be descendants of the same old stock. The people of the centre must have learned to use metal from their neighbours, the invading occupants of Los Millares; they may have been mixed with intrusive Armenoids akin to those who entered Crete in Early Minoan times. But their pottery was native. And they did not become absorbed in the gloomy cult of the dead, but set out to explore the possibilities of the barbarous continent.

Conclusion

It remains to ask whether the older neolithic culture was a spontaneous growth. For such a view there is no evidence. Nowhere has a point of transition been identified in Spain where the neolithic arts may be seen springing out of the epipalæolithic industry. The Almerian culture[1] is admittedly intrusive and arrives fully formed. It may have originated in the Eastern Mediterranean area (for it is Mediterranean in type as are its authors in race) and spread thence along the coasts of North Africa in the same way as the Danubian culture spread from Hungary to Belgium. The neolithic civilization, thus introduced by Mediterraneans from Africa, was no doubt borrowed by their epipalæolithic neighbours in the centre.

The cave people from the centre we may further suppose spread into Portugal; for the later megalithic people do not seem to be the descendants of the fishers of Mugom. There in Portugal the neolithic culture, borrowed from the Mediterraneans of Almeria, may have been enlarged by the visit of voyagers from the Eastern Mediterranean who introduced a more elaborate cult of the dead and the megalithic tombs.

The subsequent prehistory of the Peninsula may then be recapitulated as follows. The native inhabitants of Portugal had already begun to sail the western seas and carried the idea of the dolmen tomb to Britanny, Ireland and Denmark. But in the second half of the IIIrd millennium B.C. the maritime peoples of the Eastern Mediterranean established trading posts in Almeria, Algarve, and at the mouth of the Tagus and spread inland into Andalucia. The same people used Portugal as a base for wider expeditions to the north and west and established a regular trade with Britain, Ireland, and

[1] Bosch Gimpera, *Ensayo*, p. 16.

Scandinavia. The consequences of this trade are seen on the one hand in the jet and amber of Portuguese and Almerian tombs, on the other in the beehives of Britanny, Ireland, England and Scotland, and in the Mediterranean decoration on vases from Danish passage graves.

But the people of the centre acquired the culture of the new settlers in Almeria and armed with their borrowed weapons set out on their own account to explore Britanny, South France, Sardinia and Central Europe, introducing there the bell-beakers, copper and regular commerce. Thus there arose in the Iberian peninsula a veritable counterpart of the maritime civilization of the Ægean albeit infused with original elements. This culture carried on for Western Europe the civilizing mission of the Ægean islanders. Meanwhile in the north-west the older megalithic culture developed or rather declined in its absorption in the cult of the dead. Likewise in the north-east the extension of the older Almerian culture was only superficially affected by the intrusive civilization of Los Millares in Valencia and Catalonia. The reassertion of the older culture and of the beaker folk from the centre against the exotic elements of the south-east was responsible for the creation of the bronze age of El Argar.

The civilizations of the Peninsula derived their wealth and diffused their light by means of maritime commerce. But in the seventeenth century a shorter route for the amber trade to the Ægean across Central Europe and down the Adriatic was being opened up. At the same time Bohemian tin was beginning to compete with the western ores. Hence the incipient decline already visible at El Argar. Finally the collapse of the Minoan and Mycenean thalassocracies in the twelfth century cut off all intercourse with the Ægean. The cultural decline which followed the deprivation of that eastern stimulus shows how completely the civilization of Iberia had been dependent on that of the Ægean.

CHAPTER X

The People of the Steppes

Mediterranean civilization was diffused by maritime commerce and its early influence was restricted to the coastal areas. It cannot explain the growth of the early civilizations of Central Europe which have already appeared before us as victorious invaders in the realm of Mediterranean influence in South Italy. The orientalists have therefore been inclined to invoke some sort of immigration across South Russia to account for the continental cultures of the new stone age.

Unhappily the archæological data from that area are still very limited and so it is especially pleasing to record that a large expedition is at present exploring in the Kuban region with the support of the Soviet Government. Microliths which may mark the presence of epipalæolithic men are reported from the Kirgiz steppe, the Crimea, the banks of the Donetz, Dniepr and Desna and so link on with the Tardenoisian industry of Little Poland and Lithuania.[1] The earliest connected remains of post-glacial habitation however come from *kurgans* or barrows covering red-coloured skeletons. The distribution[2] of such burials coincides in a general way with that of the microliths. They are commonest just north of the Caucasus in the Kuban, Taman and Terek regions, and on the steppe between the Volga and the Dniepr. Further north and west in Astrakhan, Chernigov, Orel, Voronezh, Kharkov, and Poltava they are rare, but sporadic instances occur even in Central Russia and in Roumania[3] (Map III).

The one common feature of all these barrows is that the corpse has been covered thickly with a layer of red ochre.[4] Hence these interments may be called ochre-graves. Normally

[1] (1) p. 5; cf. p. 7 supra.

[2] (5) and (3), cf. *P.Z.*, III, p. 267.

[3] Near Constanza, *P.Z.*, X, p. 152.

[4] The study of Schuchhardt and Træger shows that the whole corpse was covered with a thick layer of red ochre. The flesh was not artificially removed. *P.Z.*, X, pp. 153f.

the skeleton lay in the contracted position. The furniture of the ochre-graves is generally very poor and shows much variation from place to place, as does the grave form itself. Nor do the ochre-graves belong to a single epoch. Some look absolutely neolithic; others may overlap with the Scythian invasion.

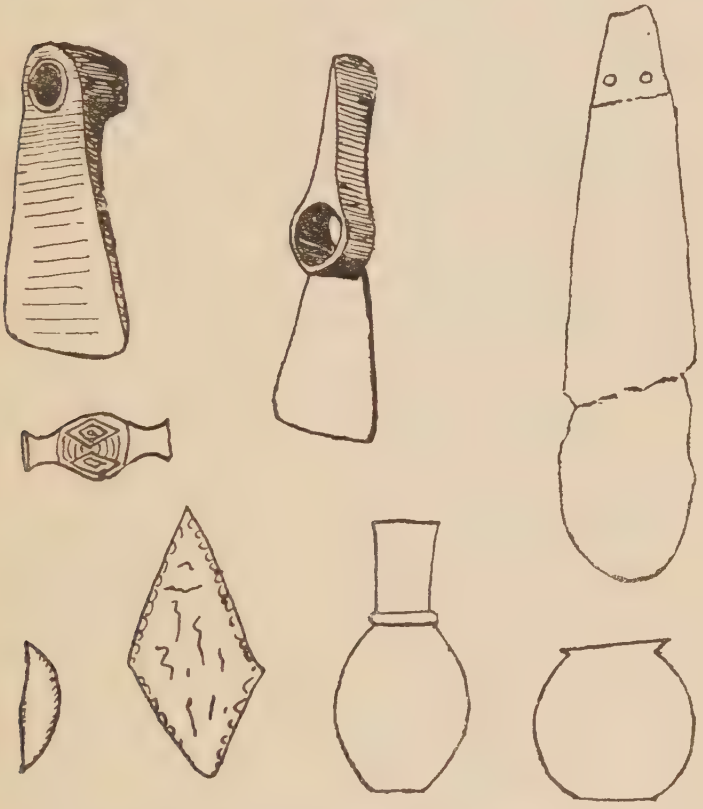


FIG. 61. Maikop. Weapons and gold and silver vases ($\frac{1}{4}$); bead and arrow-heads ($\frac{1}{1}$).

The richest and most interesting graves are those of the Kuban valley, and they are often surmounted by a truly gigantic barrow. The most famous of all is a huge *kurgan* near Maikop.[1] It covered a great shaft grave, walled with

[1] *Otchet*, 1897, pp. 2ff. (4) pp. 2off. with figures of the canopy, vases and jewelry.

wood, and divided into two compartments. The chief who formed the principal interment had been laid to rest under a canopy ornamented with gold and silver rosettes and plaques representing bulls and lions. Jewels, beads of carnelian, gold and silver among which the spool-shaped bead of Fig. 61 is notable, and simple wire rings of gold and silver adorned the bodies. The regal wealth was illustrated by bowls and flasks of precious metal and a stone bowl with a golden neck and lid. The forms are all quite primitive. None of the vases had handles, but the neck of one silver flask (Fig. 61) was encircled by a gold ring, a feature which suggests comparison with the collared flasks of Denmark. Some of the silver bowls were engraved with scenes depicting the local landscape and a procession of animals including Przybalski's horse. Clay vases, one with traces of painting, were added to contain larger supplies for the future life.

It was a warrior prince who lay here ; with him were his weapons and the symbols of his power—a Mesopotamian transverse battle-axe, a two-bladed axe like an axe-adze, a flat knife-dagger with rivets, and a curved rod all of pure copper, and two types of finely worked flint arrow-heads (Fig. 61). The microlithic type in this copper age context is especially noteworthy.

Further up the valley near Tzarevskaya[1] red skeletons had been interred in two megalithic cists, one of which had disturbed an older grave shaft. The furniture of the megalithic graves was poorer than that of Maikop. Jewels do indeed occur in the form of very simple rings of gold and silver and copper wire and beads of carnelian and precious metal, and, in the antechambers, also of bone ; but the gold and silver vases were replaced by globular clay vessels with incised neck and shoulder decoration (Fig. 62), and cauldrons and ladles of copper. Here, too, warriors lay at rest. Their arms were knife-daggers, a spear-head with flat tang, socketed battle-axes, flat celts, and two-pronged forks all of pure copper. Besides metal they used arrow-heads of " Solutrean " form and serrated lance-heads of flint (Fig. 62). The crooked pins (" nails ") and those with an eyelet in the neck may have been needed to fasten robes of the same sort as those which later inspired the invention of the safety-pin (Fig. 62 ; 1-3).

[1] *Otchet*, 1898, pls. I-VI, cf. (6) pp. 202f.

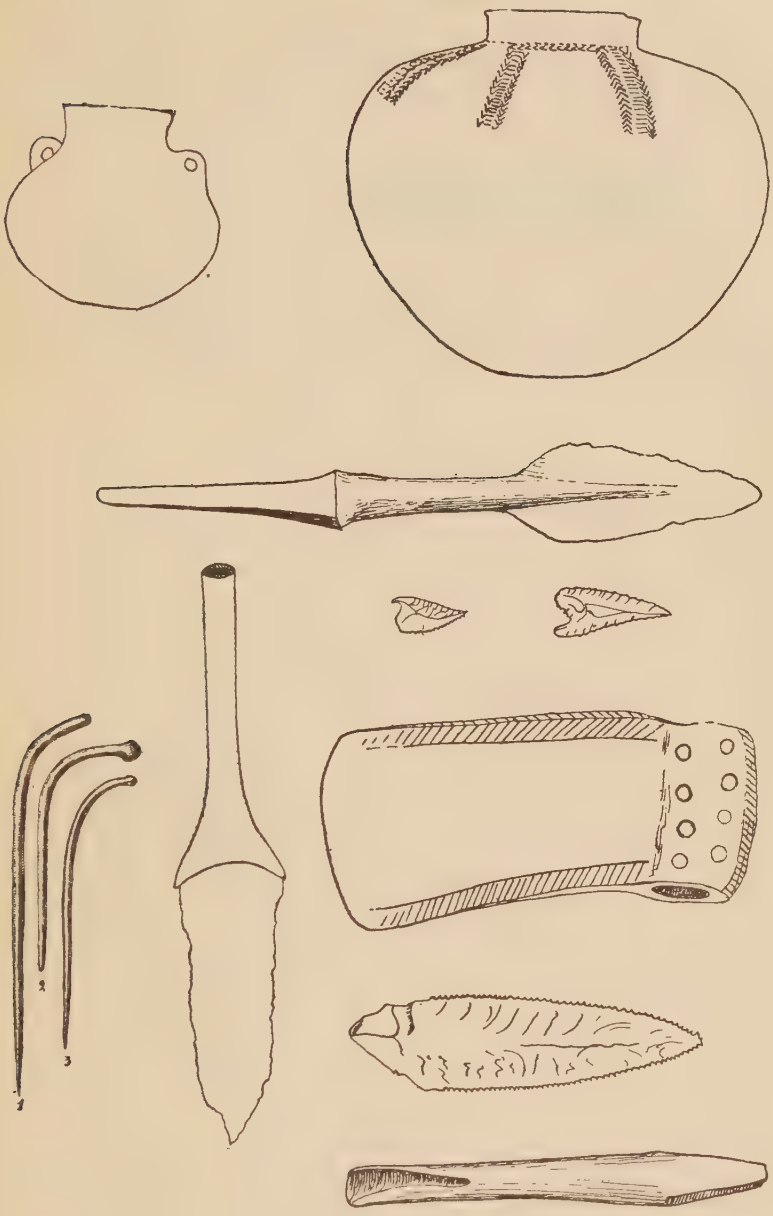
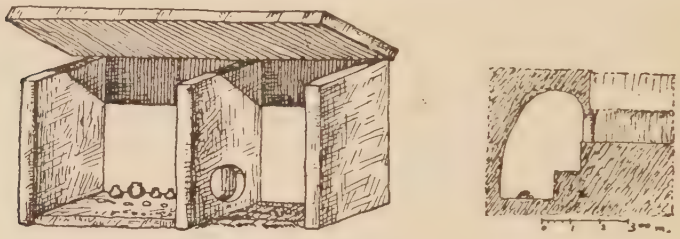


FIG. 62. Tzarevskaya. Pottery ($\frac{1}{8}$); arms and tools ($\frac{1}{2}$); pins—1 and 3, ($\frac{2}{3}$) (No. 2 comes from Ulski).

In form the tombs of Tzarevskaya were not unlike the wooden chambers at Maikop, but they were built of well-squared megalithic blocks. Each was divided into two compartments by a transverse slab perforated in one case with



1 2

Fig. 63. 1, "Dolmen" of Tzarevskaya; 2, "Catacomb grave," Donetz region.

a round, in the other by a square aperture, i.e., a holed-stone (Fig. 63, 1). The total dimensions of "dolmen" 1 were (1.80 + 1.15) × 1.60 × 1.20 m. "Dolmens" are not uncommon on the upper Kuban, on the Black Sea coasts to the west and in the Crimea and extend across the Caucasus. None of the South Russian megaliths have yielded any furniture, but the holed-stone is a regular feature of the Caucasian group.

Returning to the *kurgans* proper of the Kuban region, only one more near Ulski[1] need be described in detail. One grave contained with an extended skeleton some gold and copper beads, several headless clay torsos rather like Fig. 31, 4, and two alabaster statuettes (Fig. 10, 11b) resembling Early Cycladic types. One of the graves lower down under the *kurgan* contained the clay model of a waggon shown in Fig. 64. These four barrows are typical of the rest of the Kuban group of the copper age. The usual furniture consists in implements of stone, flint and bone, and flat celts, flat tanged daggers or lance-heads, quadrangular awls, bent pins ("nails"), axes,

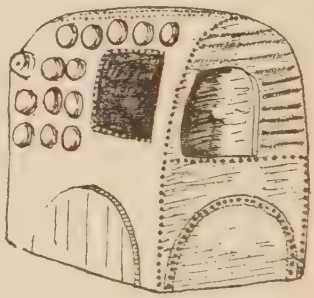


Fig. 64. Model waggon. Ulski (1/6).

[1] *Otchet*, 1909, p. 154; *Izv. I.A.K.*, XXXV, pp. 1-11, pls. I and II.

"forks," and concave chisels of copper. The socketed axes deserve especial note. The commonest are undecorated versions of that shown in Fig. 62, but variants tending to the Galich shape (Fig. 106, 4, below), are also known. The remarkable hammer-axe shown in Fig. 65, 1, was found in an ochre-grave with a flat celt and concave chisel, likewise of copper, near Vozdvizhenskaya.[2] Finally double-headed pins of bone or copper (Fig. 65, 4-5) are frequently met in the *kurgans*, but sometimes they are associated with embossed metal discs and double spirals which look suspiciously late.[3]

Going north and west the furniture of the ochre-graves becomes steadily poorer the further they are removed from the

FIG. 65. Ochre grave types. 1-4, copper; 5-6, bone. 1 ($\frac{1}{3}$); 2 ($\frac{2}{3}$); 3 ($\frac{1}{6}$); 4-6 ($\frac{1}{2}$).

Caucasus. The groups of barrows in the Don-Donetz region have been carefully studied and divided into three chronological groups.[4] The oldest graves were simple pits containing each one contracted skeleton sometimes protected by stone walling. Metal was rare and the vases were simple ovoid beakers ornamented with cord impressions sometimes forming inverted triangles.[5] To the next phase belong the so-called catacomb graves, which were in reality pit-caves like the

[1] Cf. e.g., the depôt of Privolno (Stavropol), *Otchet*, 1894, p. 42, figs. 57-61.

[2] *Otchet*, 1899, pp. 43f.

[3] e.g., *Otchet*, 1897, figs. 79-81; 1899, figs. 103-106; 1904, p. 133; and 1907, pp. 89f.

[4] (6) pp. 86f. (7) p. 19.

[5] Illustrated (2) fig. 14.

Eubœan graves (Fig. 63, 2), but were still surmounted by a barrow. In the catacombs sixty-six per cent. of the weapons and implements were of metal, but the forms were still simple (Fig. 65, 3). Stone mace-heads of spheroid or piriform shape now came into use. Silver rings, copper beads (Fig. 65, 2) derived from the Early Cycladic phallic amulets,[1] and even glass beads were now worn as ornaments and clay idols represented the Great Mother. The vases were flat bottomed and richly ornamented with spirals and hanging loops executed with a laced string (Fig. 66,a).[2] Finally the latest group of *kurgans* cover wooden coffins and belong partly to the iron age.

Further to the north-west the metal furniture is still poorer. At Jackowice[3] (Yatskovitse), near Kiev, it was

FIG. 66. *a*. Donetz ($\frac{1}{3}$); *b-c*, Jackowice ($\frac{1}{8}$).

limited to helical tubes of copper wire and spiral earrings with flattened ends. Instead of metal thick-butted flint celts were used as weapons and bored tusks took the place of gold and silver beads. The red skeletons were provided with ovoid beakers like Fig. 66,c, or basket-shaped vessels like 66,b. The former recall the oldest Donetz pottery while the latter type was also used in Kherson. In the same group were other *kurgans* covering unreddened skeletons. One such grave contained a corded beaker of Thuringian type that nevertheless looks like an improvement upon that of Fig. 66,c, while barrow 40 contained a vase decorated with a toothed wheel or with a comb. Stone hammer-axes were

[1] At Novocherkask: *Otchet*, 1891, p. 82, fig. 61.
[2] (1) pp. 102f., *Trudy*, VIII, pls. I-III.
[3] (3) pp. 1ff.

found in two barrows, a ring pendant of bone in one, and axe-headed pins (Fig. 65, 6) in two others, numbers 72 and 26. The last-named *kurgan* also contained two small bronze (?) models of hands which look like Scythian work.

The general characteristics of the ochre-graves may then be summarized after Spitsyn[1] as follows:—In addition to flint chips and stone-hammer-axes the most notable weapons are flat copper spear-heads (Fig. 65,3) (Kuban, Terek, Donetz and Kherson), and stone mace-heads (Kuban, Terek, Donetz and Crimea). As ornaments besides bored teeth, spiral earrings with flattened ends of silver or copper (Terek, Donetz and Kiev), and hammer-headed pins of bone or copper (Fig. 65,5) (Astrakhan,[2] Kuban, Terek, Kherson, and Kiev) were worn. Silver[3] is unusually common, but amber was only found once in a barrow in Chernigov. The red skeletons belonged to a tall people, distinctly dolichocephalic and with rather low foreheads and pronounced supra-orbital ridges. From the closer study of two skulls from ochre-graves at Jackowice[4] it appears that the people were orthognathic and leptorhine.[5]

The bones of sheep and horses were common in the ochre graves of the Terek, Taman, Jekaterinoslav, Crimea and Saratov districts, suggesting a nomad pastoral folk, but grain has been found in some barrows. No settlements have been identified. The gap is, however, partly filled by the clay model from the *kurgan* near Ulski on the Kuban. Here we see the wheeled dwelling of the nomad. In conclusion, it should be mentioned that stray copper battle-axes more or less resembling those from the Kuban barrows are widely distributed throughout the ochre-grave area. Thence they extend in ever diminishing numbers northward up the Volga into Central Russia,[6] north-west as far as the Oder, and westward into Roumania, where they join on to the Hungarian group (Map III). The concave chisels of copper have a somewhat similar distribution. On the other hand the number of perforated stone axes is inversely proportional to the number of copper

[1] (5) pp. 99f.
[2] *Otchet*, 1904, p. 133.
[3] (2) p. 65.
[4] (3).
[5] But a short head was found in Kherson, *P.Z.* III, p. 170.
[6] (7) pp. 21f.

specimens, but stone axes with special affinities to the Central Russian Fatyanovo group are met even in the Kuban valley.[1]

The ochre-graves then were due to a nomadic pastoral people. But these people were not unacquainted with primitive agriculture and had intercourse with neighbours on several sides. Particularly in the Kuban region the influence of the Mesopotamian civilization south of the range is perfectly obvious. The transverse battle-axe from Maikop is a pure Mesopotamian type, and single-bladed battle-axes were long used in the same region.[2] The axe-adze from Maikop might well be an amalgamation of the two Mesopotamian types. The form has not indeed been found in Mesopotamia, but near Asterabad a specimen was found in a " treasure " in company with gold vases of unmistakably Sumerian origin. The same depôt contained pronged weapons like the forks from Tzarevskaya.[3] The ochre-grave spear-heads and the curious concave chisels belong to Sumerian types.[4] The stone mace-heads were characteristic signs of authority in Mesopotamia from the earliest times. Tallgren has recently compared the copper " nails " from Tzarevskaya and Ulski to the crook born by Sumerian and Babylonian princes, but the more correct analogy lies with the eyelet pins from Early and Middle Hittite graves in North Syria.[5] Flint arrow and lance heads from Susa[6] technically resemble those from Maikop and microliths were used by the prehistoric inhabitants of Babylonia. The hand-made beakers from the older graves on the Don and Donetz recall the shape of wheel-made Mesopotamian vases[7] and even the clay idols may be due to inspiration from the south.

In the Don-Donetz region the peculiarly Cycladic phallic beads of copper and the very form of the catacomb graves prove intercourse with the Ægean. The extension of that connection to the Kuban itself may be indicated by the alabaster idol from Ulski. The jewelry and gold vessels from Maikop too have a certain resemblance to those of Troy II to which both Tallgren and Rostovtseff have drawn attention.

[1] (7) fig. 6.
[2] Both types in Andrae, *Ischtartempel*, pl. 60.
[3] *J.Eg.A.*, VI, pp. 6ff, pl. III.
[4] De Sarzec, *Découvertes en Chaldée*, pl. XLIV, 6.
[5] *L.A.A.A.*, VI, pl. XIX*c*; note also the spears like Fig. 62.
[6] *Mem. Délégation en Perse*, XIII, figs. 60-69.
[7] e.g., Andrae, pl. 60.

The spiral earrings from later *kurgans* certainly derive from Trojan types. The Caucasus are rich in metals and Early Ægean merchants may well have anticipated the Argonauts. Perhaps the introduction of the axe-adze into Crete was a reflex of such a voyage. In any case the Caucasian and Crimean dolmens might, with the reservation to be noted below, be connected with the same ancient sea-trade.

Relations with the west are equally evident, but their interpretation is disputed. The practice of covering the body with red ochre itself goes back to the palæolithic epoch on the Atlantic coast and in neolithic times was widely distributed from Sicily and Italy through the Danube Valley and Switzerland to the Middle Rhine and North Germany. It is then probably to be regarded as a common heritage from the old stone age. But nowhere was the custom so consistently observed nor the ochre deposit so thick as in South Russia. Archæologically the Kuban is linked to Hungary by the copper axes and axe-adzes and the spiral earrings.

North-western relations are even more intimate. From Troy and the Caucasus to Jutland the battle-axe was the typical weapon, and several types are common to the whole area. Peculiarly close bonds connect the Kuban with Central Germany. The vases from the " dolmens " of Tzarevskaya both in form and decoration belong to the same family as the " globular amphora " which is distributed from Eastern Galicia to Pomerania, but is best represented in the Saal-Elbe region. And there at the Baalberg such amphoræ have been found in a double megalithic cist with a holed-stone for the transverse slab identical with the " dolmen " of Tzarevskaya.

Again our South Russian nomads cannot be dissociated from the warriors who made the corded ware of Thuringia and the separate graves of Jutland. All three buried their dead under barrows in the contracted position, wielded battle-axes, decked themselves with necklaces of bored teeth and made beakers ornamented with cord-impressions. Moreover, the ochre-grave people of Jackowice were anthropologically identical with the Thuringians.

Finally the Kuban culture is linked to the Fatyanovo culture of Central Russia by unmistakable traits. The ornament of the Fatyanovo vases is paralleled at Tzarevskaya and the bone beads from the antechambers of the latter tombs

recur in the Fatyanovo graves. Sporadic metal axes from Central Russia connect on with the Kuban types, while equally sporadic stone axes from that region belong to the Fatyanovo series.

How are these northern and western relations to be explained? Kossinna[1] and most German archæologists see in the ochre graves the monuments of war-like Indo-Germans advancing from Scandinavia and Germany to colonize South Russia. Their progress is marked by the barrows with corded ware, the thick-butted flint celts, globular amphoræ, and stone battle-axes. The "dolmens" of the Black Sea coasts represent a revival of the megalithic architecture to which they had been accustomed in Scandinavia and North Germany. Presumably the copper battle-axes are regarded as copies of the Nordic stone battle-axes.

Professor Tallgren[2] has recently adopted a similar position. He regards the Central Russian Fatyanovo culture as derived from the battle-axe culture of the Danish separate graves. He believes that he has found the continuation of the Central Russian culture in the copper age of the Kuban. He fully recognizes indeed the southern element therein. But "Nordic barbarians had occupied the seats of the oriental kings and buried in their graves the plundered treasures just as when a couple of thousand years later in the great migrations the Germans overran the rich Roman Empire."

English archæologists, Myres[3] and Peake, have assigned quite another rôle to the ochre-graves. They regard the nomads of the steppes as warriors, perhaps the proto-Aryans, who invaded Central Europe in the copper age and even reached England, bringing with them the custom of building a barrow over the grave. Myres looks to Inner Asia for their original home and seems tempted to connect them with Anau. Peake[4] regards the steppe folk as descendents of the palæolithic Solutreans, but assigns them the same rôle as far as Western Europe is concerned.

[1] *Die Ursprung der Urfinnen und Ur indogermanen und ihre Ausbreitung nach Osten* in *Mannus*, I and II.

[2] (7) Esp. pp. 25f.

[3] *G.J.*, XXVIII, pp. 541-551.

[4] *Bronze Age*, pp. 66ff. The date of the skulls from near Kiev mentioned by Keith as resembling those of the bronze age invaders of Britain, *J.R.A.I.*, XLV, p. 19, is unknown. They can hardly have belonged to ochre-grave folk, since the latter were usually dolichocephalic. People went on building *kurgans* all over Russia throughout the Middle Ages.

The real issue can only be decided when the battle-axe cultures of Northern and Central Europe have been described ; for much depends on the possibility of regarding them as independent and local growths. But certain aspects of the problem must be noticed here.

The controversy would at once be ended if the respective dates of the ochre-graves and, say, the oldest Danish separate graves could be once determined. But there are no data available for a chronology of the ochre-graves. All that is certain about them is that they are pre-Scythian. Indeed, the material in South Russia to be classed as pre-Scythian is so scanty and so poor in internal development that no very high antiquity need be ascribed to the ochre-graves. Applying the principle of continuity, the advantage is all with the school of Kossinna. It is true that stylistic considerations lead Rostovtseff to date the jewelry and vases of Maikop to 2500 B.C.,[1] but Farmakovski[2] on the same grounds dates them a thousand years later. The signs of Early Cycladic connection again would tend to favour a date somewhere in the third millennium for the later catacomb graves of the Donetz, but the signs themselves are by on means unambiguous. Types of graves, of idols, and of beads may have lingered on for many centuries in a backward region. Finally the parallels with Mesopotamia are chronologically worthless ; for in Babylonia and Assyria types perfected by the Sumerians before 3000 B.C. were preserved unchanged for two thousand years.

However, the Mesopotamian data do settle one point. The latest excavations at Kish and Ur show that the Sumerians were using socketed battle-axes of the type of Fig. 61, 1, and others with parallel blades at least in the second half of the fourth millennium B.C.[3] Thus one type of Maikop axe and the preconditions of the other were in existence well before 3000 B.C. It follows that the socketed copper battle-axes cannot be translations into metal of stone prototypes evolved in the north ; for not even the most extreme German archæologists claim that the Nordic hosts had reached the Caucasus, still less Mesopotamia, at such an early date.

[1] (4) *loc. cit.*

[2] *Mat. Arch. Ross.*, XXXIV, pp. 50ff.

[3] I have to thank Prof. Langdon and Mr. Woolley for this information as to their epoch-making results.

But the consequences of this admission are far reaching. The principles of prehistorical criticism exclude the assumption that such a peculiar weapon as the battle-axe was invented independently at two centres. And the perforated or socketed battle-axe, whether of stone or copper, is a very peculiar weapon. It is only necessary to glance at the distribution of battle-axes in Europe to see this. Their use was virtually restricted to Eastern and Central Europe. In the Mediterranean area these weapons appear as strange intruders just in the extreme north-west corner of Asia Minor and in Upper Italy. West of the Alps and the Rhine they were never made, save in Britain. And their use was brought thither by invaders from Central Europe.

Now if the priority of the copper types be admitted, the first European centre of distribution must be located in South Russia. It has long been maintained by many high authorities in Scandinavia itself[1] that the so-called axe-adze was the prototype for certain Nordic stone axes. The type in a primitive form is met on the Kuban. The only intelligible explanation of such a curious weapon is to regard it as a combination of the two Sumerian types in one of which the blade was at right angles to the shaft and in the other parallel to it. And this amalgamation of the two types cannot have taken place west of the Kuban since the curious transverse axe of Mesopotamia is unknown to the rest of Europe. Hence the Hungarian battle-axes (axe-adzes) must be derived from the Caucasus not *vice versa*.[2]

Where copper was scarce the translation of the copper shape gave rise to the various types of so-called "Nordic" stone battle-axes. They are most common in the north, for the very simple reason that metal ore does not exist there and the age of metals began late. Some of these stone battle-axes go back directly to the axe-adze type of Maikop—so for instance the Fatyanovo group—others are derived from variants which equally existed in metal in South Russia such as the axe of Fig. 65, 1, or the copper boat-axe found stray in South-east Russia. But if all the European battle-axes are to be derived

[1] e.g., by Montelius, *AfA.*, 1899, and Knut Stjerna, *Före Hällkisttiden.*

[2] There are intermediate specimens on the Dniepr and the Dniestr, at Erösd in Transylvania and in Silesia, Map II.

from South Russia, it is quite likely that their wielders came thence too.

For the benefit then of those who cannot find a satisfactory explanation locally for the genesis of the battle-axe cultures of the Thuringian barrows and Danish separate graves, the following alternative view may be offered. An equestrian population, warlike and nomadic, ranging the steppes, came into contact with the Sumerian civilization in the Caucasus region. They adopted and adapted some elements of the higher culture and brought these with them to Northern and Central Europe. Thither the nomads advanced in several waves and by diverse routes, some up the Volga, some along the Dniepr, the Vistula and the Oder, some across the steppe to Transylvania and the Danube. We shall find out in the succeeding chapters, when we describe the copper age of Hungary, the separate graves of Denmark, and the battle-axe cultures of Thuringia and Central Russia, whether this explanation works. In any case the study of the remains from South Russia has not been fruitless. We have found, if not the origin of the neolithic civilization of Europe, at least a possible explanation of that element which, as we shall see, gave to the copper and early bronze age civilizations of the North their peculiar vigour and genius.

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(1) Julius Ailio, *Fragen der russischen Steinzeit*, *SMYA.*, XXIX. (Illustrated.)

(2) M. Ebert, *Südrussland in Altertum.* (1922.) (Illustrated.)

(3) Eram Majewski, in *Swiatowit* VI. (Excavations at Jackowice, illustrated, followed by a general discussion of the whole question ; in Polish.)

(4) Rostovtseff, *The Iranians and Greeks in South Russia.* (Oxford, 1922.) Good pictures of art objects.

(5) Spitsyn, General account of the ochre-graves summarized in *AfA.*, New Series, II, pp. 66f.

(6) A. M. Tallgren, *Die Kupfer- und Bronzezeit.* (*SMYA.*, XXV.) (Illustrated.)

(7) A. M. Tallgren, *Fatjanovokulturen i Centralryssland* in *F.M.*, 1924. (Well illustrated.) (Swedish.)

CHAPTER XI

The Agriculturalists of the Black-Earth Region

The nomads of the steppes whom we identified in the last chapter can hardly have been the ancestors of the peasants who created the earliest civilization in the Danube valley. The peasant cultures begin west of the region previously surveyed on the well watered and fertile loess plains lying between the steppes bordering the Black Sea and the great forests of Central Russia and Volhynia. In the Ukraine, Eastern Galicia and Roumania the loess is to-day overlaid by a more recent deposit, equally fertile, known as the black-earth. Such a region is eminently suitable for early agricultural settlers and the oldest traces of post-glacial habitation are due to such people; for the "epipalæolithic" microliths are met only on the borders of the fertile tract. The peasants of the black-earth belt painted their pottery as did the earliest inhabitants of Mesopotamia, Elam, and Turkestan. This trait has inspired some orientalists with the hope of connecting the first Ukrainian peasants with the ancient food producing peoples of the Western Asia. However the known facts must be stated before that hypothesis can be judged. The first painted pottery is commonest and most richly developed in a small enclave of the black-earth belt just west of the Carpathian range on the upper course of the Alt in Transylvania (Map I). Here the patient excavations of Dr. Ferencz Laszlo at Erösd have revealed a very high civilization which we have already met as an intruder in Thessaly. A brief description of his results forms the best introduction to the whole question of the painted pottery.

Transylvania and Tripolye A

Erösd was a settlement, or rather a series of several superimposed settlements, fortified with a ditch and rampart. Its inhabitants dwelt in solid rectangular houses with walls

of wattle and daub, resting on stout wooden posts. Free standing pillars helped to support the roofs. Two houses in the oldest settlement[1] had a sort of pillared porch on the short side on to which a larger room at a slightly higher level opened,

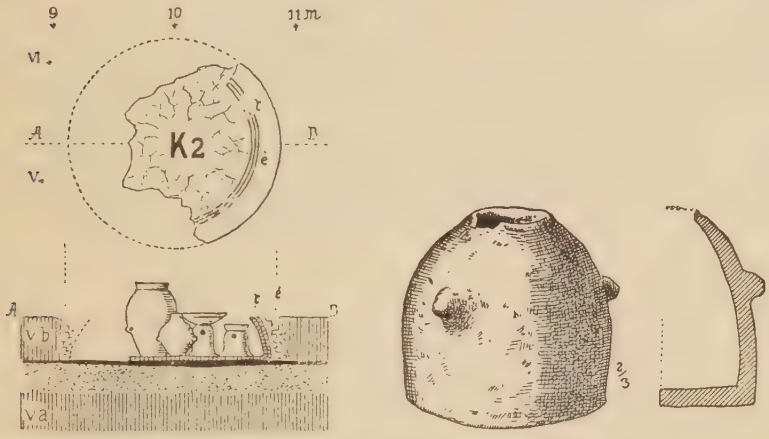


FIG. 67. Actual Potter's Oven and Model found at Erösd. After Laszlo.

recalling the plan of the Thessalian megaron. Both the porches and inner rooms were furnished with raised hearths of small stones. The hearths and the walls were ornamented with painted plaster.[2] The houses had been destroyed

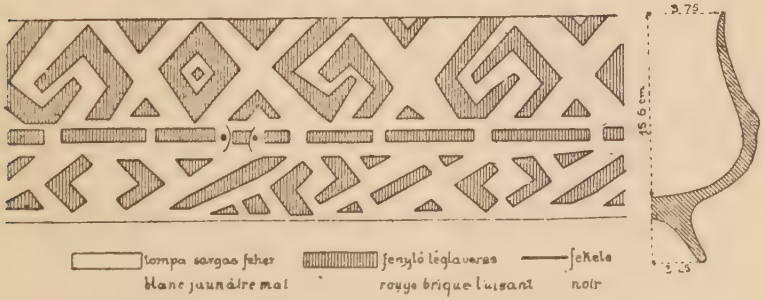


FIG. 68. Painted Cup, Erösd. After Laszlo.

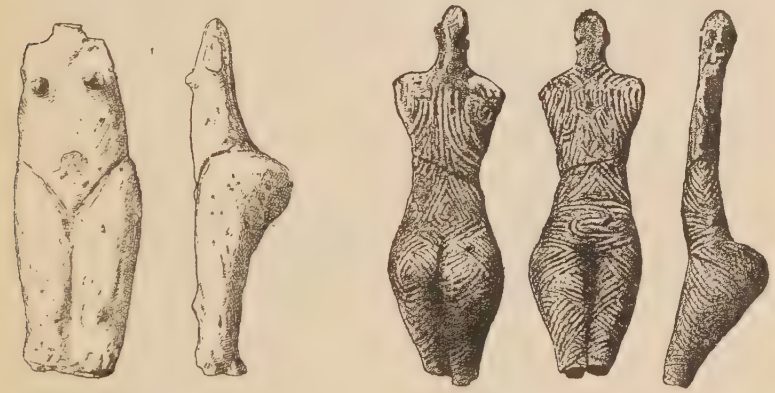
by fire and the intensity of the conflagration had converted the mud plaster into a brick-like red substance.

Such houses belong to no poor peasant culture and their furniture was equally remarkable. The pottery is the most

[1] (5) L.1 and 2 on plan II. [2] (5) Fig. 15.

FIG. 69. Transylvanian Pottery. After Laszlo.

conspicuous memorial of the technical skill and aesthetic taste of the primitive Transylvanians. Their vases were made of fine clay and well burnt to produce a red ware. Dr. Laszlo has discovered part of the oven used and a model of the complete apparatus (Fig. 67). The same sort of ovens are in use in the region to-day. The vases themselves are painted in all the styles mentioned in describing Dimini ware (p. 69), and in addition a sort of ribbed technique in which the surfaces in relief were painted white (Fig. 69, 3) was used.[1] The designs are based on the spiral and meander (Fig. 69) and are sometimes so regular that a stencil must have been employed.



1 2

FIG. 70. Figurines. 1, Transylvania; 2, Cucuteni A.

The shapes (Figs. 68-69) include conical bowls, several types of hollow tubular supports (2), fruit stands (6), cups (1), craters (4), and urns with short necks (5). Though genuine handles were not made, the ring feet, the profiling of the rims, and the distinct necks all denote a complete mastery of ceramic art and freedom from all bondage to preceramic prototypes. According to the excavator the pottery is perfect in the lowest stratum and remains the same at all levels.[2]

Numerous clay figurines illustrate the religious ideas of the inhabitants. The majority are female, steatopygous, and erect (Fig. 70, 1), but seated types and even ithyphallic males[3]

[1] Illustrated in colour in *Arch. Ert.*, 1912, p. 66.
[2] (4) p. 259.
[3] (4) p. 256.

were manufactured. Models of animals—cattle, sheep, goats and swine—were also made and theriomorphic vases as in the Ægean have been found. Clay was also used for the manufacture of ladles with very long handles, axe-shaped beads, and clay stamps on which the traces of paint still survive to show their use as *pintaderas* for painting the person (Fig. 71). The clay stamps undoubtedly resemble the Early Minoan III button seals and have parallels in Troy, in Cappadocia, in Bulgaria, and in Moravia in the Danubian II period. At Erösd they were only found in the first settlement.

The authors of this surprising civilization used polished stone celts including the shoe-last type of hoe,[1] and simple flint flakes retouched only on one side. The celts were never perforated, but were sometimes fitted into socketed sleeves or perforated hafts of deers' horn as at Maglemose and in Thessaly. Horn was also employed for picks and bone was worked into awls, fish-hooks, and ladles.

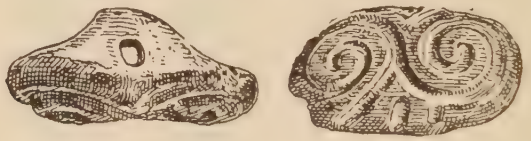


FIG. 71. Clay Stamp or *pintadera* (½).

But even the first settlers at Erösd possessed copper and wore simple ornaments, wire bracelets and helical spirals, of that metal. By the middle strata copper awls and a fragmentary flat knife appeared and in the uppermost level an axe-adze of the Hungarian type A was found. The inhabitants of the village also utilized the gold, in which Transylvania is very rich, for ornaments from the earliest times. Other ornaments worn were shell discs, bored teeth and small bone plaques perforated at either end, probably designed to be sewn on to garments like those found at Remedello in Italy. At a neighbour-station little beads of marble were discovered.[2]

We do not know how the prehistoric people disposed of their dead. They lived by agriculture, by pasturage, and by fishing.[3] A canoe hollowed out of the trunk of a tree and

[1] (4) Fig. 88.
[2] *M.P.K.*, I, p. 382, nos. 30-32.
[3] The animal remains from Priesterhügel included *Bos primigenius*, domestic swine (*Sus scrofa*), and the *moufflon* sheep, ib. p. 380.

divided into three compartments was found near Erösd. But they were evidently a peaceable race ; for the only specific weapons found are arrow-heads.

Material indistinguishable from that of Erösd is found at twenty-one other stations on the Upper Alt. East of the range the fortified station of Cucuteni[1] A must have been partly contemporary with Erösd and was intimately connected therewith. The pottery resembled the Transylvanian, but the commonest ornament consisted of reserved spirals outlined in black, the interspaces being painted in reddish brown on the originally white clay ground. The Cucuteni figurines (Fig. 70, 2) recur at Erösd. No metal was met at Cucuteni A. A stray axe-adze of type A with flat celts and other implements of pure copper has, however, been found at Horodnica in Eastern Galicia[2] where pottery of the Erösd type also occurs.

Further east a related and parallel civilization was discovered by Chwojka on the banks of the Dniepr, near Kiev. It is called the Tripolye culture A. But here painted pottery was so rare that the excavator regarded the vases he found as imports. The characteristic Tripolye pottery is decorated with wide grooves filled with white paste, supplemented by pits and bosses. The commonest motive is the spiral. The most notable shapes are the single tubular stands and pairs of such stands linked by cross-pieces and handles, called binocular vases (Fig. 72, row 5), together with the large piriform urns and the dishes shown in Fig. 72, rows 4 and 5.

Several copper implements, flat celts and a pick-axe belonging to the axe-adze family, and even moulds for casting celts are assigned by Chwojka to this culture. Perforated hammer-axes and mace-heads are also reported in addition to celts of stone and simple implements of flint, bone and horn. Figurines were not very common at Tripolye, but both erect and seated types occurred. In addition to swine, sheep and cattle, horses' bones were plentiful. The villages were situated near streams and the huts arranged in wide circles.

There is no doubt that Tripolye A was partly contemporary with Cucuteni A and that the latter in turn synchronized with one or more of the several settlements at Erösd.[3] But it is

[1] *ZfE.*, XLIII, pp. 582ff.
[2] Uvarov, *Sbornik melkich trudov*, II, pl. XXIII, 62f.
[3] (2) p. 286.

difficult to say which of the three groups is the older. The wealth of copper at Tripolye might be due simply to closer proximity to the Kuban culture. Such uncertainty increases the mystery which surrounds the origin of the remarkable civilization which we have just described.

The obvious course would be to connect it with the great belt of very ancient civilizations using painted pottery,

FIG. 72. Galician and Ukrainian Pottery.

extending from Elam and Mesopotamia to Turkestan,[1] Baluchistan, and even China.[2] Some tripod vases from Tripolye stations are remarkably like the Li tripods of China. The Asiatic pottery indeed belongs to diverse epochs and constitutes no single unitary group. But the common features are sufficient to prove intercommunication between remote

[1] Anau, Pumpelly, *op. cit.*

[2] Geological Survey of China, *Bull.* 5, 1923; *Palæontologia Sinica*, Series D, I, 1 and 2; cf. Franz *M.A.G.W.* LIV, pp. 69ff.

areas and migrations of cultures if not of peoples. South Russia is merely a prolongation of Asia. What more natural therefore than to regard the culture of the black-earth as an extension of that of Upper Asia, and its authors as forerunners of the Turks, Tartars and Scyths? The spiral motive is occasionally found in Transcaspia and even as far east as Honan in China.[1] Prof. Ailio tells me that he has identified half a binocular vase, wheel-made indeed, among Transcaspian sherds now at Leningrad. The hollow vase supports from Erösd cannot be dissociated from the ritual "pot-stands" of Mesopotamia and Elam,[2] and our pedestalled bowls must be connected with the clay tables placed in the oldest Sumerian graves. The clay figurine has a long history in the east and the European types are closely related to the oldest models of Ishtar.[3]

Erösd and Tripolye may then represent settlements of the same mobile people who created one of the cultures of Anau and that of Honan. These might be the "neolithic brachycephals" of classical theory who brought agriculture and the Asiatic domestic animals to Europe. However, this is very dubious. Our oriental parallels have been drawn at random from remote and distinct cultural groups. The spiral is not characteristic of any oriental pottery. The technique of painting at Erösd and Cucuteni is utterly unlike that of Anau or Susa. Not one pregnant vase form, not a single characteristic motive links any of the cultures of Anau to Transylvania. And there the mace-head so distinctive of Western Asia and going back to the oldest settlement at Anau, is quite unknown. And if the art of vase painting came from the East, why is painted pottery so rare on the Dniepr and best represented on the western frontier of the province? Possible alternatives to an Asiatic origin therefore deserve serious consideration.

The south may be at once excluded. Dimini culture in Thessaly is indeed identical with that of Erösd, but we have seen that it was intrusive in the Mediterranean and have agreed to derive it from the north. The Thessalian connections only settle one point. They show that the Erösd civilization must at least have begun well before 2500 B.C.

[1] (1) p. 99; for the spiral on a vase found near Ararat, see Frankfort, p. 38, note 1; cf. also, *Palæon. Sin.*, D, 1, 2, and *Illustrated London News*, Sept. 20th, 1924 (Punjab).

[2] Frankfort, fig. 13—Assur and Musyan.

[3] Andrae, *Ischtartempel*, pl. 51.

To the west the civilization of Erösd is intimately linked with that of the Danube valley in the second period. The spiral ornament was at home there. The pedestalled bowls and hollow supports recur in Hungary. Female figurines moulded in two parts separately and then stuck together are common to Transylvania and Moravia and the clay *pintaderas* recur in the latter area. Finally while true painting is strange to the Danube valley, crusted colours on the vases do occur in the second period. At the same time the piriform urns from Tripolye are very like some vases from Butmir in Bosnia also ornamented with spirals though true grooved ware is not met there or elsewhere in the west.

The crusted decoration of Danubian II pottery is more primitive than the true painting of Erösd and so Prof. Hubert Schmidt and other archæologists have been inclined to regard the Transylvanian culture as an eastward extension of the Danubian. Cucuteni A and Tripolye would then be due to a further easterly movement of the same people. Such a view is in itself intrinsically probable. We shall see that the Danubian civilization did actually spread very far and that the motives actuating its expansion are thoroughly intelligible. However, as already stated, the "more primitive" crusted pottery of Danubian II succeeds the true painted wares of the Erösd family in Thessaly and the Thessalian period III is connected through Vinča with Danubian II. It follows that Danubian II is later than the foundation of Erösd. Moreover obsidian was regularly associated with the crusted pottery in Hungary, Moravia, and Serbia. If the founders of the Transylvanian civilization had come from Hungary where the obsidian in question originated, they would surely have brought some with them. But none has been reported. The Danubian origin is then unproven. The crusted ware of Danubian II must in any case be regarded as a barbarous imitation of the true painting of Erösd, i.e., as a degeneration product, and not as its prototype. Perhaps the orientalists after all may be said to have won their case by default.

The Later Black-Earth Culture

No certain continuation of the civilization of Erösd apart from the upper layers of that station itself can be found unless it be in the Danubian II culture of Hungary. On the

other hand Cucuteni A leads on directly to Cucuteni B. This later culture extends with remarkable uniformity throughout Bukowina, Eastern Galicia and the Ukraine[1] (Map II). Everywhere the same types of pottery and figurines deriving from those of Cucuteni A are met. The vases are indeed now angular, the spirals have degenerated to circles and tangents, and polychromy has been almost entirely abandoned. On the other hand motives derived from nature, stylized dogs, griffins, stags, men, or trees, have been introduced to fill up the blanks in the geometrical patterns, and the binocular vase is universally used from the Dniepr to the Pruth (Fig. 72, rows 1-3). On the Dniepr grooved ware with only rectilinear motives persists (Fig. 72, row 3, right). And everywhere coarse intrusive vases may betoken intercourse with the wilder people of the forest to the north.

The characteristic idols of the second period are erect, flat, and perforated for suspension (Fig. 73, esp. *c-e*). But sitting types, including kourotrophoi, and males were still made. Miniature chairs and vases as well as models of animals are common and one theriomorphic vase is known.

Very fine long flint blades were in use, but the technique of flint working shows no improvement. Nothing comparable to the fine flint daggers and knives of the Italian or Spanish chalcolithic period is to be found in the black-earth region. The stone celts are now also inferior. Strangely enough metal finds from period II are rarer than they were in the preceding epoch. None are recorded from Tripolye B sites. At Bilcze Złota in Galicia a flat copper dagger, a crescent-shaped razor, and an awl of copper were found and at Koszyłowce, further west, copper and silver wire and a bone dagger imitating metal types prove the knowledge of metal. Finally Cucuteni B yielded a flat celt and an axe, like Fig. 87, 7 below, of copper, a round-heeled dagger with several rivets of copper or poor bronze and a bronze torque.

In the Kiev Government the people lived in rectangular pit dwellings with the "kitchen" containing the stove at lower level than the rest of the hut. In Galicia rectangular huts built above ground containing stone hearths and near by outhouses covering ovens, were recently discovered by Prof. Kozłowski. But the bulk of the remains come from mysterious

[1] Fully described with illustrations and complete bibliography in (2).

structures called *ploshchadki*, which appear as areas of hard clay, burnt brick-red, apparently derived from the conflagration of rectangular houses like those of Erösd ; for the burnt clay bears the impress of poles and traces of paint. But no hearths and very little kitchen refuse are to be found under the areas. Hence Chwojka and von Stern developed the curious theory that the *ploshchadki* were the remains of mortuary houses, designed to contain the cremated remains of the departed.[1]

FIG. 73. Figurines and Throne. *a* and *f*, Podolia ; *b-e*, Kiev ; *g*, Carelia ; *h*, Pernau (bone) ; *i*, Siberia (bone). After Ailio. *c* and *h* $\frac{1}{3}$; the rest, $\frac{2}{3}$.

For the supposed cremation there is really no evidence, and the theory has been generally abandoned.[2]

The problem of the *ploshchadki* is by no means simplified by some models recently published. One found at Popudnia in Podolia seems to represent an oval platform standing on six posts and walled on three sides; to the right of the entry

[1] (6) summarizes these views well, cf. (7) pp. 808f ; (8) pp. 54f.
[2] (1) pp. 90f ; cf. Schuchhardt in *P.Z.*, XIV, pp. 168f.

stands a "hut," which in comparison with the figure standing near it looks very small. Majewski[1] interprets this model as the reproduction of a pile-dwelling. Ailio[2], describing a very similar model, regards the erection to the right of the entry as just an oven, the legs as adventitious embellishments such as might be added to toys and the whole structure as a house with the roof removed to reveal the interior. It is therefore very doubtful whether the makers of the painted pottery in the Ukraine actually lived on pile-structures like those of the Swiss lakes or the Italian *terramare.*

The mutual relations of the *ploshchadki* show at least that their occupants dwelt in regular villages. Between the huts beehive-shaped subterranean ovens were often excavated. Only Cucuteni B is known to have been fortified. The inhabitants of the villages lived by agriculture and pasturage, supplementing their diet with the products of the chase and by fishing.

It would be wrong to assume that the people of the later epoch were more backward than their predecessors. In particular the rarity of metal from the settlements means very little when it is remembered how extraordinarily few metal objects were found in the ruins of Phylakopi II and III. Graves might give a totally different impression had any been found. The painted pottery must have lasted into the bronze age; for Minyan ware has been found at Cucuteni. But its makers vanished completely, leaving no trace. In the Dniepr region the barrows with corded ware occupy rather the same area as the *ploshchadki,* but represent no continuation of the peasant culture.[3] In the painted pottery area of Galicia poor cist graves containing globular amphoræ probably belong to a new and intrusive culture.[4] Cucuteni was rather longer occupied and shows late relations with the Ægean[5] and Hungary, but no signs of propagation into any later cultural group. The Ægean imports supply a date between 1700 and 1500 B.C. for the end of this second period.

It has been inferred from the complete disappearance of the painted pottery from south-eastern Europe that its makers

[1] *Swiat.* XI, pp. 77f., pls. VI-VIII.
[2] (1) p. 93, fig. 27.
[3] Tallgren in *FM.*, 1924.
[4] List given by Hadaczek in *Archiwum Naukowe,* V, pp. 488ff.
[5] In the form of a fragment of Minyan ware, *P.Z.*, XV, p. 27, note 26.

must have been driven out and their civilization destroyed by invading nomad tribes.[1] Such a conclusion is possible. In one case on the Dniepr an ochre-grave had disturbed a *ploshchadka*. The Galician cist graves may mark the advance of some people from the eastern steppes or from the north. At Cucuteni and above the settlements at Erösd sherds with cord ornament have been found. On the other hand it cannot be assumed that all ochre-graves are later than the black-earth culture. If the conclusions of the last chapter be correct, the copper implements from Tripolye A sites must be due to contact with the Kuban culture and this contact may well have been of a peaceful nature, since the painted pottery continued. Again the Donetz pottery from the catacomb graves shows the influence of the Tripolye A culture in its spiral decoration.[2] Even in Galicia fragments of globular amphoræ seem to have been found in the settlement of Koszyłowce with painted pottery. The ochre-grave overlying a *ploshchadka* in the Kiev Government[3] was of late type covering a wooden coffin. In general the nomads preferred the steppe and may have been content to take tribute from the agriculturalists dwelling in the valleys. Rostovtseff indeed considers that the ochre grave people were the first comers and were weaned from their nomadic habits by the example of the vase-painting people.

But in any case the makers of the painted pottery did in the end abandon their old seats. Did they go south ? The Dimini culture of Thessaly cannot be the continuation of the Tripolye-Cucuteni B civilization since its affinities are so clearly with the older civilization of Erösd-Cucuteni A. But the chalcolithic culture of Thrace is at least partly parallel with that of Cucuteni B and must therefore be examined more closely.

The Thracian Copper Age

The peculiar culture of Thrace extends from Wallachia and the Dobrudja through the valleys of eastern Bulgaria to Macedonia (Map II). At Czernawoda in the Dobrudja the characteristic painted pottery is said to overlie a settlement in which monochrome wares, compared by Schuchhardt[4] to

[1] So Kossinna in *Mannus* I and Peake, *Bronze Age*, p. 72.
[2] (1) p. 100.
[3] (7) pp. 779 and 794.
[4] *P.Z.*, XV, pp. 10ff. Note the "Magdelenian" harpoon from the upper stratum.

Danubian I pottery from Moravia, predominate. Elsewhere the material from the mounds, though extraordinarily varied, is said to show no change from the bottom to the top!

The typical pottery of the whole region (Fig. 74, 3-5) is allied both in form and decoration to that of the black-earth belt to the north and of Thessaly II to the south. But instead

FIG. 74. 1, Tell Ratchef; 2, Tell Metchkur ($\frac{1}{4}$); 3 and 4, Tell Ratchef ($\frac{1}{6}$); 5, Kodja Derman ($\frac{1}{6}$); 6, Kodja Derman ($\frac{1}{4}$).

of genuine painting graphite was the usual medium of decoration. It appears either as black on a yellowish brown ground, or silver-grey on black, or sometimes even as white on red, according to the firing. The motives include, beside stumpy spirals, chequer patterns as at Dimini and wolf's teeth. In addition to carinated conical bowls and jars, cups with small

strap handles are known.[1] A few sherds of this fabric have just been found in the Vardar valley, with pottery stated to resemble first period Thessalian wares.

Other wares were manufactured in the region. Some have plastic ornaments as further west on the Alpine slopes, others show incised motives, including series of fine wedge-shaped points as in Thessalian I fabrics or stamped patterns among which the crescent-shaped impress of a split reed (Fig. 74,2) is most characteristic. Besides the forms with general black-earth affinities square pedestalled boxes as in the first period of Thessaly (Fig. 74, 6), and askoi as in the third and finally piriform jars, with incised volutes recalling Butmir and Tripolye A forms are not rare. Candle-sticks with Early Minoan and Egyptian parallels are also common.

The implements are equally diverse. Some celts are bevelled as in Thessaly I,[2] others belong to the "shoe-last" family. But beside these early types perforated axes with

FIG. 75. Bone Pendants. Denev (½).

expanding blades are met. Again the horn picks, axes, and hafts have always a well-squared hole for the shaft, as at Troy II and in the late copper age of Central Europe (cf. Fig. 133, 3). The flint work was primitive and the forms are limited to blades with unilateral retouching and triangular arrow-heads. But bone was skilfully handled and used for barbed arrow-heads and fish-hooks and for round points sharpened at both ends[3] with parallels in the oldest Swiss lake-dwellings and in Western Europe (Fig. 120, b, below). But copper was also in use, and from it flat celts, fish-hooks, awls, and pins with simple looped heads were cast. From the French excavations at Tells Metchkur and Ratchef come several small metal objects, some, such as an iron ring, of very dubious associations.

For ornaments the chalcolithic inhabitants of Thrace wore finely worked bone ring-pendants of the type already

[1] Where no other reference is given see (3).
[2] (11) Fig, 70*b*; cf. fig. 30 D above.
[3] (11) p. 97.

familiar from Troy and Thessaly (Fig. 75), beads of *Cardium* and *Lithospermium* shell and of clay, including a curious type, which may be compared to a paste bead from an ancient deposit dated between 3000 and 2500 B.C. at Assur.[1] *Spondylus* shells served as bracelets as in Danubian I, and beside copper, bone pins with parallels at Troy fastened the garments. Clay *pintaderas* giving a spiral imprint like those from Erösd and Moravia show that the people added to their beauty by painting themselves. The Thracian house form is illustrated by the models shown in Fig. 76. Popov's excavations[2] have shown that raised hearths of stone and others coated with plaster like those of Erösd were built to warm the huts.

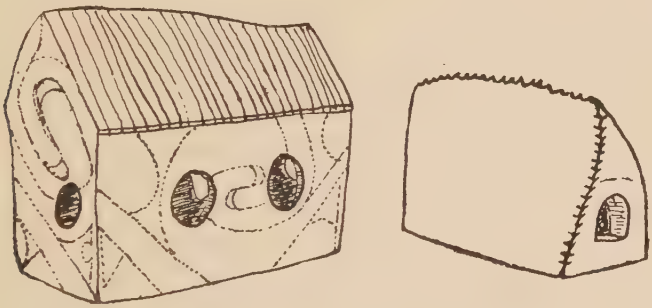


FIG. 76. Hut Models. Denev. After Popov. ($\frac{1}{12}$).

The religion of the inhabitants of this region was akin to that of the peoples of the black-earth, the Danube valley and Thessaly. The bone idols might be a continuation o the flat clay type of the second period of the black-earth culture. Others are steatopygous and look older, but some have exact parallels in Thessaly III-IV. The squatting males again are a late Thessalian type. Animal models and a tauromorphic vase as well as model thrones and couches connect on with Ukrainian finds. But triangular altars find their closest parallels in Thessaly and on the middle Danube in the second period. Clay phalloi[3] from Kodja Derman can only be due to a westward extension of the Anatolian cult illustrated at Troy and Boz Euyuk.

[1] Andrae, *Ischtartempel*, fig. 61 and (3) p. [8], *Izv.*, 178B.
[2] (11).
[3] (11) fig. 151.

The affinities of Thracian culture to that of the black earth area are self-evident from the foregoing sketch. But the material described does not form the continuation of the latter or an intermediate stage between Dimini (i.e., Thessaly II) and Erösd. Its relations with Thessaly point principally to the later periods with some vague hints of connections with the older first. The Danubian connections also belong mainly to the second period parallel to Thessaly III. On the other hand influence from Troy II is unmistakable. Finally the civilization of the Ægean undoubtedly affected that of Thrace. In South Bulgaria at Sveti Kyrollovo a bridge-spouted vase of Middle Minoan I form, Troadic mugs with high wish-bone handles, a very fat well-moulded figurine and a flat-tanged dagger of copper were found in a trial pit which also yielded the usual graphite fabrics.[1] An Early Cycladic III marble idol, like Fig. 22, 2, was also found near Philippopolis,[2] but neither this import nor the Ægean vases from Sveti Kyrollovo are certainly contemporary with the graphited pottery found on the same sites.

The civilization just described is then best regarded as a parallel development to the later culture of the black-earth, not as its continuation. Its authors may have been descendants of the people who colonized Eastern Thessaly in the second period, left behind on the way and creating a culture of their own under inspirations reaching them from four sides, from Troy, from the Ægean and their relatives in Thessaly, from the Danube valley, particularly Vinča, and from Cucuteni II. But no more than in the black-earth belt does chalcolithic civilization in Thrace seem to lead anywhere. There is even less material in Bulgaria than in South Russia to bridge the gap between the "chalcolithic period" and the mature iron age. We look in vain for instance for the Thracian swords of which Homer sang. Such a hiatus makes the dating of the Thracian copper age perilous. Though most of the Thessalian parallels point to a date round about 2000 B.C., the resultant discontinuity would be hard to explain.

Conclusion

The cultures with painted pottery then present an unsolved problem. At Erösd, at Cucuteni and at Tripolye we

[1] *P.Z.*, VI, pp. 71f, note fig. 4*b*. [2] *P.Z.*, VII, p. 218.

have a really great civilization. But it seems to lead nowhere. If it be regarded as of oriental origin, a partial and degraded continuation might be found in the Danube valley. If the colonists of Transylvania really came from the Danube, it is equally hard to say where they went. Can their civilization be dated sufficiently low to allow of their identification with the Thracians of early historical times ? The positive evidence is against such a chronology, but it is not absolutely final. It is a remarkable fact that the iron age of Central Europe—Hallstatt—begins with a revival of painted pottery, that the forms of the vases recall those of South Russia, and that the graphite technique and the chequer pattern appear on them as on the chalcolithic vases of Thrace. If these coincidences mean anything, then the idea of immigrants from Asia, the invasion of Thessaly from Erösd and the parallels between Thrace and Thessaly III must all go by the board ; for the Hallstatt culture cannot be earlier than 900 B.C. and to bring down Cucuteni II so late would require a most drastic revision of the date before 2500 B.C. proposed for Erösd.

Such readjustments might be possible if the painted pottery did in fact spread very slowly eastward as the Danubian I culture spread westward till the Scythian or some earlier invasion reversed the movement. But all that is unfounded speculation. The weight of evidence places the painted pottery between 2700 and 1700 B.C.

The attempt to find a continuation of the black-earth culture in Hallstatt seems just as impracticable as is Schmidt's thesis that would derive the Minoan civilization from Cucuteni and Erösd. The last-named position appears even more untenable now that the material in question has been fully described, than it did when we had only Dimini to guide us. So the great civilization with painted pottery appears with meteoric brilliance only to vanish into the surrounding night.

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(3) V. G. Childe, *Some affinities of chalcolithic culture in Thrace*, *Man*, XXIII, 2.
(4) F. Laszlo, *Stations de l'époque prémycénienne dans le comitat de Haromszek*, *Dolgozatok*, 1911. (Magyar and French.)
(5) F. Laszlo, *La station primitive de Erösd*, *ibid.*, 1914.
(6) Minns, *Scythians and Greeks*. (Cambridge, 1911.)

For special sites.

(7) Tripolye, Chwojka in *Trudy* XI. (Russian.)
(8) Petreny (Bessarabia), von Stern in *Trudy*, XIII. (German.)
(9) Koszyłowce (Galicia), Hadaczek *La colonie industrielle de Koszyłowce, Album des Fouilles.*
(10) Denev, (East Bulgaria), Popov in *Izvestia Bulgarskoto arch. Druzhestvo* (Sophia), IV (Bulgarian with short German resumé).
(11) Kodja Derman (North Bulgaria), *ibid.*, VI.
(12) Tel Metchkur (near Philippopolis), Seure et Dégrande in *B.C.H.*, 1906.

Chapter XII

Danubian Civilization

The significance of the culture of the agricultural people of South Russia in world history is uncertain. A kindred people in the heart of Europe created a civilization whence pulsed the life-blood of progress throughout the greater part of our continent.

The oldest post-glacial[1] settlers in the valleys of the Danube and its tributaries were peasants who here as in the Ukraine tilled the fertile loess and pastured their herds on the steppe and in the forest glades. Both in the Danube valley proper and further north in Galicia, Silesia, Saxony, and the Rhineland, whither the Danubians spread, the neolithic peasants invariably settled on the loess and near streams.[2] The peasant culture is best known in the north Danubian area ; in Hungary and Serbia it presents peculiarities to be described later. For the moment Moravia and the adjoining territories will furnish the clearest picture of the standard Danubian civilization.

Danubian I (see Map I)

Here the peasants lived in small villages of irregular oval huts partly sunk in the ground. From Moravia, however, a fragmentary clay model[3] shows that they could build apsoidal houses, and in Thuringia the Danubians erected rectangular dwellings supported by stout posts.[4] The peasants possessed all the domestic animals, and apparently of the classical neolithic species known from the Swiss lake-dwellings—short-horned cattle, the turbary sheep and pig. To these may be added the goat, the big ox, *Bos primigenius*, and most probably the horse.[5]

[1] Excepting, of course, the "loess-Magdelenian," if that be post-glacial.
[2] Schliz, *ZfE*, XXXVIII, pp. 335f, with map.
[3] *P.Z.*, XI, p. 85, fig. 7.
[4] *P.Z.*, VI, p. 299.
[5] The best studied remains, those from the Rhineland (*B.R.G.K.*, XII, suppl.), are late, but all the animals are attested for Danubian I elsewhere (e.g., Hoernes, *J.Z.K.*, III, 1905, and *P.A.*, XXVII, p. 195) save perhaps the horse and he was known by period II in Hungary.

The practice of agriculture is demonstrated by the querns found in the settlements and above all by the shoe-last celt which is absolutely typical of the Danubian culture. It is always flat on one side and curved on the other, like Fig. 77. Sometimes it was perforated for a handle. It is in reality a hoe. On the other hand the only possible weapon of this epoch is the disc-shaped mace-head. So the Danubian agriculturalists must have been a peaceful folk. Nor did they engage largely in hunting, since the bones of game are not common in their villages.

Danubian I pottery is remarkably fine, slate grey in colour, and carefully smoothed. The oldest fabric, called

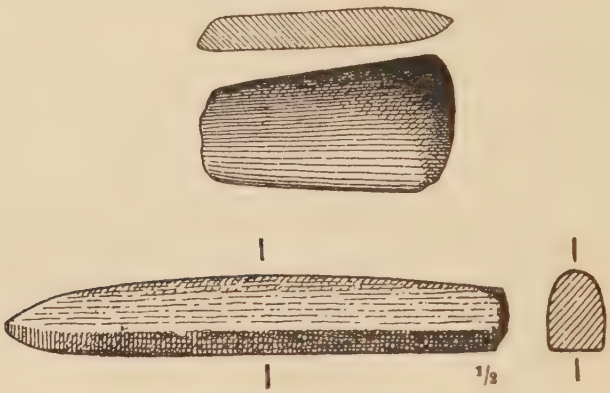


FIG. 77. Shoe-last celts. After Seger.

after the leading motive spiral-meander ware, is ornamented with shallow incisions later relieved with small pits, but never incrusted. The typical shapes are bottles and gourd-like bowls (Fig. 78). Knobs or lugs are the only handles. A later fabric was decorated with rectilinear skeuomorphic designs made up of a series of fine strokes or wedge-shaped impressions which might be filled with white paste. The second ware may then be called stroke-ornamented pottery. Its forms are rather more angular than those of spiral-meander pottery (Fig. 81, 1). Though this type is certainly later in Moravia, the two styles may belong to distinct tribes who were elsewhere partly contemporary, but the pottery is the only certain differentia between them.[1]

[1] Cf. especially (11) and (2) I, pp. 14-29.

Like the peasants of the black-earth, the Danubians made female idols of baked clay which may have been fertility charms. The older examples are always very crudely modelled.

Clay beads or spindle-whorls were not used. The typical ornaments of the oldest Danubians were bracelets made from the shell of *Spondylus gæderopi*, which must have been imported from the Mediterranean.[1] Very few burials of this epoch are known. Isolated graves found in Lower Austria,[2] Moravia,[3] and Bohemia [4] show however that the spiral-meander people buried the dead in the contracted position. In Bohemia[4] the makers of stroke-ornamented pottery seem to have practised cremation.

FIG. 78. Danubian I pottery ($\frac{3}{20}$).

The Danubian I culture is the oldest neolithic civilization in Central Europe and was a principal factor in civilizing the adjoining regions. On the fertile loess the peasants would multiply very rapidly and under the conditions of primitive agriculture would seek an outlet for the increasing population by founding new settlements in the unoccupied tracts. And so they spread steadily. The spiral-meander people gradually enlarged their territories, occupying the loess areas in Galicia,[5] spreading along the Oder as far as Nosswitz in Silesia, and down the Elbe to Magdeburg in Saxony and along the Danube into Upper Bavaria. At a later date they colonized the Rhine

[1] *W.D.Z.*, 1900, p. 223; *P.Z.*, IV, p. 376; *ib.* IX, p. 54.
[2] *M.A.G.W.* LI, p. 46.
[3] (10) p. 20.
[4] (2) I.
[5] Kozłowski, *Epoka kamienia*, pp. 261f.

valley, ultimately reaching Belgium along the Meuse as the forests gradually thinned out in the dry period beginning about the middle of the IIIrd millennium.[1] They were followed into Silesia, Saxony, and Bavaria by the people using stroke ornamented pots, who likewise reached the Rhine. The extensions of Danubian culture to the Rhine, however, belong in time to period II and had best be described later.

Now we must turn to the Middle Danube. Apart from some graves with *Spondylus* shells which may really be later,[2] there is little evidence for Danubian I settlement in the Hungarian plain. But in Serbia the lower levels of the stratified site of Vinča near Belgrade belong to the Danubian I period.[3] The sunken oval huts, the shoe-last celts, the rude clay idols, *Spondylus* bracelets, and the spirals and meanders decorating the vases suffice to attach Vinča I to the contemporary culture of Moravia. But there are notable peculiarities in this southern material. The pure gourd-like shapes have not been noted at Vinča nor in Hungary. On the other hand, pedestalled bowls and urns and lids with a human face on the rim, just as at Troy, are found even in the lowest levels at Vinča and recur at Tordos in Transylvania. Technically at least a double-necked vase from Szolnok in Hungary[4] must be classed as Danubian I and isolated examples of the same type are known elsewhere. Besides the dark-faced incised ware even Vinča I knew a fabric with a red slip compared by Vassits to the Anatolian pottery from Troy II[5] and another ware ornamented by scraping the sooty slip as at Boz Euyuk and in Thessaly.

Moreover, even in the lowest strata at Vinča small beads of copper were discovered. Vinča and Tordos have yielded some very curious heads of alabaster, whose exact context is uncertain. Such peculiarities betray at least foreign influences which are not traceable in the northern material.

Finally the famous industrial station of Butmir in Bosnia[6] occupies a very eccentric position. Spiral decoration, shoe-last celts and disc-shaped mace-heads are found as in Danubian I.

[1] (15) p. 74.
[2] *ZfE.*, 1896, p. 81.
[3] (3); cf. also *B.S.A.*, XIV, pp. 319ff.
[4] *Arch. Ert.*, 1909, p. 156, figs. 2 and 3.
[5] But that was before the oldest red ware of Thessaly I was well known.
[6] (4).

But many ceramic forms such as the footed bowls, the use of white incrustation, the painted sherds discovered by Stocky,[1] the excellent modelling of the clay statuettes, the perforated axes, the spherical mace-heads, and tanged arrow-heads of flint are all proper to Danubian II. It is therefore more likely that the Bosna, like the Rhine, was colonized by Danubian I people, but only in the second period. And the Butmir settlement was occupied for a long time. The sherds with spiral and meander decoration which appear in South Italy in the Early Bronze Age connect on with Butmir designs.

Whence then came the Danubian peasants and their civilization? The spiral decoration was known to palæolithic man and the Danubian figurines remind one of the "Venus of Willendorf."[2] But effective continuity between the palæolithic and the neolithic age in Central Europe has yet to be proved. Schliz ascribes the civilization of the loess region to Cro-Magnon immigrants from the West.[3] Kossinna boldly treats the Danubian peasants as descendants of the Ertebolle people of the Baltic, but he is fain to admit the absence of all archæological evidence for a point of contact and differentiation.[4] In reality epipalæolithic remains are wanting in the Danubian province proper. In the cave of Kostelek in Moravia spiral-meander people with a fully developed neolithic culture were the first successors of the Magdelenian hunters.[5]

Vassits[6] looks to the Troad for the home of the first colonists of Vinča. The ceramic parallels do indeed bespeak some sort of relation between the two areas and it would be attractive to regard the settlements on the Danube as a result of that expansion from inner and southern Asia Minor which we detected in describing the civilization of Troy. But Anatolian connections mediated by Vinča do not explain Danubian civilization without remainder. The spiral decoration is quite foreign to the Troad, the gourd-shaped vessels of Moravia can hardly be derived from the Vinča forms, still less the Trojan, but seem to postulate a direct pre-ceramic ancestor; finally, apart from the face-urns, pregnant Anatolian

[1] (12) I, p. 129.
[2] de Morgan, fig. 100.
[3] *ZfE.*, XXXVIII, pp. 312ff. *P.Z.*, IV, pp. 36f.
[4] *Die Indogermanen*, p. 75; but an unfinished celt from Butmir looks quite like an epipalæolithic Nøstvet celt from Scandinavia (12), fig. 11.
[5] *L'Anthr.*, 1899, pp. 271f.
[6] Cf. *B.S.A.*, XIV.

types are lacking even in Vinča. So that the direction of the intercourse between Serbia and the Troad is by no means certain.[1]

In a general way the Danubian culture has Mediterranean affinities. The *Spondylus* shells point in that direction; figurines are common in the Mediterranean basin; the spiral though at home on the Danube, subsequently flourished in the Ægean; the occurrence of shoe-last celts in Thessaly I may be significant. The scanty anthopometric data could be interpreted as supporting a Mediterranean origin. A skull from the lowest stratum at Vinča was long-headed.[2] Schliz' study of the skeletons found with spiral-meander pottery in Silesia, Bohemia, Saxony and in the Rhine valley revealed a short, moderately dolichocephalic, race. He even admits a certain resemblance in the skulls to Sergi's Mediterraneans, but declares that there are important differences and ultimately claims the Danubians for a branch of the Nordic race.[3] Finally the grains from Danubian II settlements (none certainly belonging to the first period have been studied) belong to species which are common in the Mediterranean basin.[4] Nevertheless no known culture in that area can be regarded as the direct ancestor of the Danubian.

Finally, if the founders of Erösd came from Asia, it would not be absolutely impossible to regard the Danubian culture as a degraded version of the Transylvanian despite the notable difference in the pottery—a red ware with mature forms in the east, black ware with primitive shapes in Moravia and the west. But the disc-shaped mace-heads are Egyptian, not Asiatic.

Danubian II (Map II)

In the Danube valley, Silesia, and Saxony, Danubian I is succeeded by a new civilization which in part at least is just a continuation of the old with new elements super-added.

[1] Cf. Myres in *C.A.H.*, vol. I.

[2] *R.E.A.*, 1919, p. 29.

[3] *AfA.*, VII, pp. 257f. Not a single really brachycephalic skull has ever been found in a Danubian I context. But if Alpines always cremated, as Myres thinks, the rarity of graves would be explained and the long skulls could be attributed to intruders.

[4] The six-eared barley from Lengyel is the same as that from Troy (*P.Z.*, XIII, p. 174). The wheats, *Triticum compactum* from Butmir and Lengyel and *Triticum monococcum* from Lengyel, had an early circum-Mediterranean distribution, but the latter was not cultivated in Egypt. (Much in *M.A.G.W.*, 1908, pp. 200ff.)

From Belgrade to the Middle Oder, Danubian II forms an unitary group. Much of the material is derived from graves as at O Besseny,[1] and regular cemeteries like Lengyel,[2] Lucskai,[3] Bodrogkeresztur,[4] and Jordansmühl.[5] The dead were interred in the contracted position and regularly accompanied by tall pedestalled bowls or tables. In Hungary bits of red ochre were sometimes placed with the corpse. The skeletons belong to a tall dolichocephalic race.[6] The living inhabited rectangular[7] houses and it is possible that the settlements were sometimes fortified, e.g., at Lengyel.

A continuation of the old agricultural manner of life is shown by the use of shoe-last celts sometimes now grown into veritable ploughshares. But now simple heart-shaped axes

1 2

FIG. 79. 1, Copper ornaments, Jordansmühl (½). 2, Jadeite celt, Silesia (⅔). After Seger.

perforated for hafting and occasional triangular celts of greenstones such as jadeite,[8] came into use (Fig. 79, 2). In the earlier phases of the period obsidian derived from the mountains of North Hungary (Slovakia)[9] was used in addition to flint. Copper, too, was beginning to be widely known. It was employed for ornaments such as spectacle spirals at Lengyel,

1 *Arch. Ert.*, XXIX. and XXXI, pp. 147ff.
2 (5).
3 (7).
4 Unpublished, verbal information from Director Bela of Buda-Pest.
5 (13) pp. 1ff.
6 Cf. also *AfA.*, VII, p. 259.
7 (3) p. 26.
8 (11), (13) p. 85.
9 *W.P.Z.*, X, p. 6; cf. (11) and (13), p. 85.

in Moravia and at Jordansmühl (Fig. 79, 1) but at least at the end of the period the simple axe-adzes and axe-hammers of type A (Fig. 87, 1 and 3) were introduced into the eastern part of the province,[1] presumably from South Russia.

The pottery[2] of this period is generally black as before, but, except at Vinča II where the older technique with the addition of white incrustation survived, incised ornament was rare. Instead bosses were employed decoratively and the old spirals reproduced by applied plastic mouldings or more often in red, white, or yellow colours applied after the polishing and

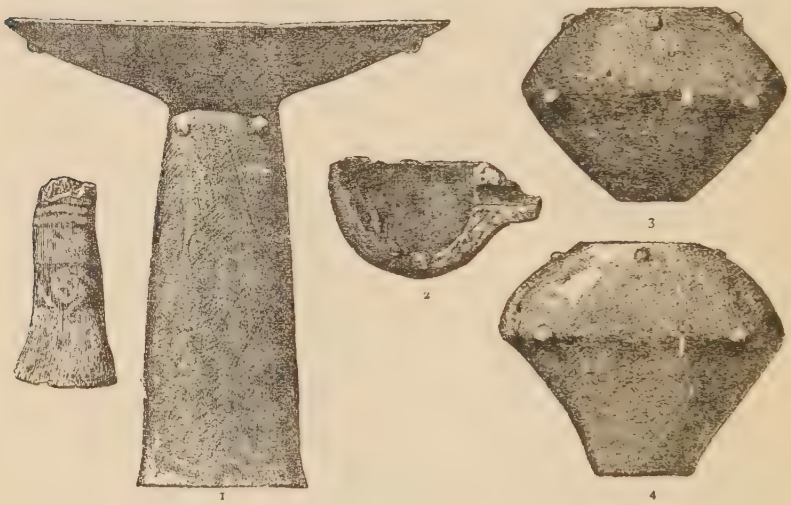


Fig. 80. Danubian II pottery, Lengyel. 1, 3 and 4, $\frac{1}{6}$; 2, $\frac{1}{4}$.

firing of the vase. This style of crusted ware, identical with that of Thessaly III, is typical for the period from Vinča to Moravia. More rarely red paint on a buff slip was used and in Lower Austria and Moravia two other local styles, probably later, may be distinguished.

Some of the old forms such as the bottle remained current, but many new shapes were adopted (Fig. 80). The high-footed bowl, and, in Hungary, tubular supports have Transylvanian

[1] At Tordos, *Arch. Ert.*, XXXIII, p. 297, fig. II, Lucskai (7) p. 34, Jordansmühl (a stray find only), *S.V.n.F.*, III, p. 51, and Ottwitz (also stray), *S.V.*, VII, p. 350, fig. 14.

[2] In addition to other authorities for the period, cf. *W.P.Z.*, X, pp. 1ff; *Arch. Ert.*, XXVII, pp. 279ff, and XXXII, pp. 244ff for the pottery.

affinities while cups often with quite high handles like Fig. 36, 2 from Thessaly III, might be derived from metal prototypes in Troy II. The socketed ladles like Fig. 80, 2, are absolutely characteristic for Danubian II.

Figurines were still manufactured, but they were now very skilfully modelled; sitting types were known and one from Vinča II[1] held a baby in her arms, like the kourotrophoi of Thessaly and South Russia. Bone idols from Vinča points to Bulgaria, and triangular altars from Vinča and O Besseny,[2] though they were embellished with animals' heads at the corners, again have analogies in Bulgaria and Thessaly.

At least in the later phase of the period in Moravia the Danubians painted their persons by means of clay stamps, giving a spiral imprint as in Transylvania and Bulgaria. They also wore beads or pendants of marble,[3] and shell buttons with V perforations.[4]

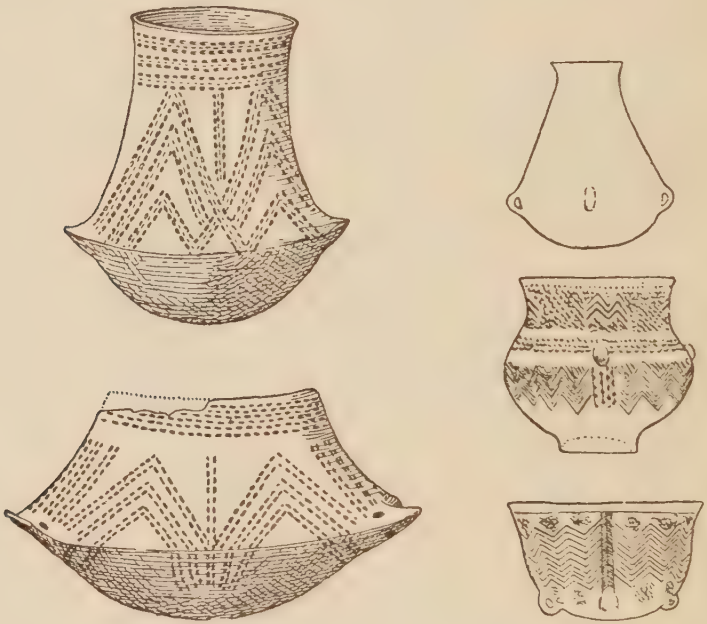
The date of Danubian II may be determined by the Thessalian and Trojan connections. In Thessaly typical crusted ware appeared at the beginning of the third period. At Troy a high-footed basin of Danubian II type belonged to the first city, but the high-handled cups of Lengyel and elsewhere cannot be older than Troy II. Danubian II would then fall between 2500 and 2200 B.C.

The relations of this culture were wide. Southern or south-eastern inspiration may be recognized in the triangular altars, in the spectacle spirals of copper and in the buttons with V perforation. The influence of Erösd was evidently powerful. Finally the axes of copper foreshadow connection with the Kuban culture. But the continuity with Danubian I is evident, and on the whole Danubian II seems a specialized prolongation of the latter, partly overlaid with new elements due to an infiltration from the east or south-east. The obsidian as well as the distribution of the finds marks Hungary as its centre. Perhaps owing to the onset of the dry period the plain was now better fitted for settlement than formerly.

From Hungary the Danubian II culture spread through Moravia to Silesia, but here already a change was discernible. The oldest settlement, Ottitz, yielded figurines and obsidian,

[1] (3) figure on p. 331.
[2] *Arch. Ert.*, XXXI., p. 147, figs. III and IV.
[3] Moravia-*Pravek*, 1911, pl. XI, 14, and Vinča (3).
[4] Lengyel (5).

but none of the pottery was really crusted. The great settlement and cemetery of Jordansmühl knew obsidian no more and possessed a new type of vase, the amphora (Fig. 83, in the front). From Silesia the Danubian II people spread westward to Saxony and Bohemia, but here they had taken to cremating their dead.[1] In Bohemia too, some overlapping with older Danubian colonies may be suspected; for some vases of Danubian I form had been ornamented with crusted designs



1 2

FIG. 81. 1, Stroke ornamented ware, Bohemia; ($\frac{1}{6}$, $\frac{1}{4}$)
2, Rössen pottery, Saxony. ($\frac{1}{10}$)

painted over the original incised patterns.[2] The Danubian II culture also reached Bavaria, where it is represented by a specialized type of pottery called Munchhof ware. Here again the Danubian II people overtook earlier peasants, since Munchhof pottery is found in hut-foundations with stroke ornamented ware.[3]

[1] (14) pp. 312f, figs. 23-26, *Mannus* III, pp. 247ff, figs. 16-17.
[2] *Mannus* III, p. 238, pl. XXIX. Jira infers from the form of these vases that "painting" began in Bohemia.
[3] *P.Z.*, VII, p. 215, *R.G.K.Bl.*, IX, p. 73.

The Extension of Danubian Culture Westward

The occupation of South-west Germany by the Danubian I peasants belongs in time to the second period. Already in Silesia stroke-ornamented pottery showed forms, such as the footed bowl, proper to the second period. In Saxony the pottery of the Rössen group is perhaps to be regarded as a further development of the same Danubian I ware. The vases regularly have feet and are decorated with deep strokes or stamped impressions incrusted with white paste (Fig. 81, 2). Most German archæologists ascribe the new technique to Nordic influence and Schliz[1] says that the Rössen skulls show a cross with the megalith-building branch of the Nordic race. However the type station, the great cemetery near Merseburg, was originally badly excavated. Supplementary excavations by Niklassen have shown that the cemetery was used in turn by all the different peoples who occupied Saxony in the new stone age, and he concludes that the true Rössen pottery is older than the Nordic wares from which it should be derived.[2] Hence Stocký's view[3] which derives the Rössen decoration from that of stroke-ornamented ware, may be accepted. Marble bracelets were indeed found with the true Rössen pottery, but the material at least was used in Danubian stations. Otherwise the form of the graves and their furniture look quite Danubian.

The colonization of the Rhine valley took place in several waves and from more than one side[4] (Map II). From Saxony people using stroke-ornamented ware swarmed along the Neckar and, at least in the neighbourhood of Worms, were the first Danubians to arrive.[5] There at Hinkelstein they have left a large cemetery in which the skeletons were buried extended, accompanied by necklaces of *Pectunculus, Cerithium* and *Unio* shells.[6] The bodies are said to have belonged to a tall and markedly dolichocephalic race like those of Lengyel. Some of the vases had feet and the perforated shoe-last celts were tending to Danubian II forms.

[1] *AfA.*, VII, loc. cit.
[2] (14) p. 334.
[3] (2) ii, p. 20.
[4] Schliz first distinguished these routes, thus explaining the inversion of the order in which the several cultural groups appeared on the Rhine in *P.Z.*, II, pp. 105ff.
[5] (15) p. 24.
[6] Koehl, *Wormser Festgab*, p. 13; cf. (16).

The spiral-meander people came from the Upper Danube. They were more numerous and more conservative. They continued to bury their dead in the contracted position, and to import *Spondylus* shells, but they sometimes placed red ochre in the graves. Finally Rössen people reached the Rhine along the Sieg. The forms of their pottery and implements are purely Danubian,[1] but the bones of game exceed those of domestic animals in their settlements.[2]

Thus the culture of the Danube was transplanted to the Rhine valley. It exhibits indeed contrasts to that of the homeland ; for instance, figurines were no longer made. The

Fig. 82. Grossgartach Pottery. ($\frac{1}{4}$)

interaction of the several groups produced a multitude of mixed styles in the pottery ; and the whole culture was later than on the Danube. Its synchronism with Danubian II is suggested in the vases and celts of Hinkelstein, and is proved by a socketed ladle (like Fig. 80, 2) found with one of the mixed styles (that of Fig. 82), at Insheim in the Palatinate. But the great mass of the implements, shoe-last celts and disc-shaped mace-heads, are purely Danubian I. The ceramic forms tell the same tale and in the ornaments a regular degradation series leads from the fine spirals of Flamborn near Worms to the decadent curves of Hesbaye in Belgium.[3]

[1] (15) p. 24. [2] (16) p. 40. [3] (1) pp. 294f.

The spread of the Danubian culture in the original area and its extension to the Rhine, were motivated by the perfectly natural need of bringing more land into cultivation. The same necessity dictated the gradual spread of the peasants in the Rhine valley itself. Southward they pressed up stream as far as Kolmar. Downstream they planted colonies as far north as Cologne and spread westward up the Meuse to the Hesbaye.[1] It was these Danubian colonists, the Omalians of Rutot, who introduced the domestic animals and agriculture into Belgium where only a barbarous epipalæolithic culture of Campignian type had hitherto ruled.[2] The same people may, to judge from some *Spondylus* shells found in the Seine valley, have reached the North of France (Map III). The Danubian peasants were thus the authors, or at least the inspirers, of the Franco-Belgian "Robenhausian" culture. The introduction of the neolithic arts into Western Europe therefore has nothing miraculous about it. It was due to the gradual expansion of early agriculturalists in obedience to perfectly natural laws and every step of their progress from the Danube valley can be traced with perfect accuracy in the implements, vases and ornaments they have left behind them.

Danubian III, The Nordic and Alpine Invaders

In period III the peaceful peasant colonies of the Danubian province were overrun by invaders from the north, east and west. Already while the settlement at Jordansmühl was inhabited by Danubian II folk, "Nordic" pottery and flint celts began to appear in the huts. In the cemetery one grave, No. 28 (Fig. 83), was distinguished from the rest by being surrounded by a ring of stones. In it lay beside a Danubian II amphora, a collared flask, a funnel-necked beaker, and two amber rings. The form of the grave and its furniture are typical of the oldest separate graves in Jutland and must belong to the same people. To them, too, may be attributed a stray polygonal battle-axe (Fig. 84b), found near the settlement since this weapon was associated in Denmark and Galicia with collared flasks. At Nosswitz, a "Nordic"

[1] *B.S.A. Brus.* XXII, pp. 3ff, XXV, pp. lxxx ff.
[2] *R.E.A.*, 1921, p. 396; cf. Rutot in *Bul. R. Acad. Belge*, 1921.

settlement with rectangular houses overlay the older Danubian I huts.[1]

The same "Nordic" people followed the Danubian II folk westward into Saxony[2] and later pressed up the Elbe into Bohemia, while a series of polygonal battle-axes extending

FIG. 83. Grave 28 at Jordansmühl. After Seger.

from Silesia and Galicia westward across Bohemia may mark their advance to Bavaria.[3] Kindred people occupied the hill of Stary Zamek in Moravia.[4] These people were great hunters and employed bone largely for implements. Instead of the shoe-last hoe they used celts of stone or flint with flat faces

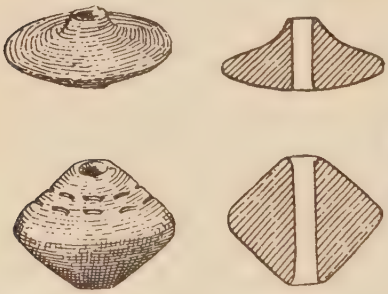


FIG. 84*a*. Clay beads. Nosswitz. (½)

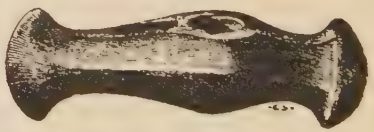


FIG. 84*b*. Polygonal battle-axe, Jordansmühl (⅓).

and a rectangular cross-section and in place of *Spondylus* shell they decked themselves with necklaces of bored teeth and clay beads (spindle whorls) (Fig. 84a). Later still came nomadic

[1] (13) pp. 27ff.
[2] (14) p. 334.
[3] Åberg, *Nordic*, pp. 89f.
[4] (11) pp. 12ff.

tribes using corded ware and burying their dead under barrows. Some of these created the latest settlement at Stary Zamek. The culture of the invaders and the problem of their origin must occupy us in a later chapter.

Simultaneously Alpine wanderers pressed down from the highlands to the west, displaced the Danubians on the Rhine and in Bavaria, and reached Bohemia along the Eger.[1] Kindred tribes may have descended upon Lower Austria and have met the "Nordics" in Moravia. To these tribes we will recur in chapter XVI. A group of vases with a crescent-shaped indent on the handles (Fig. 112) should here be mentioned.

FIG. 85. Bell-beaker, bracer, and associated vases from one grave at Woischwitz, Silesia. After Seger. (¼).

In Galicia they were associated with collared flasks, in Bohemia[2] they seem isolated, at Stary Zamek[3] they belonged to the latest settlement, and at Zöbing in Lower Austria[4] they were associated with corded ware and perhaps Alpine fabrics.

Of greater importance were the bell-beaker folk, coming also from the west. Schumacher[5] thinks that they came from Central France through the gap between the Eifel and Vosges to the Rhine. But there are no links there and France in the twentieth century B.C. could bring nothing but destruction to the civilized Rhineland. More probably the beaker-folk came

[1] (2) ii. pp. 21f.
[2] (10) pp. 185ff, fig. 106.
[3] (11) fig. 36.
[4] *W.P.Z.*, IX, p. 29, fig. 4.
[5] (16) p. 49.

either through Upper Italy across the Brenner or along the Rhone and Rhine (see Map III). Their graves are distributed from the Rhine to the Oder and from Buda-Pest to the Magdeburg-Breslau line.[1] The skeletons, belonging to a broad-headed race, were interred contracted in flat graves. With them were bell-beakers so closely resembling the Spanish that they may have been imported, though the polypod bowls that often accompany them have special affinities with Sardinia (Fig. 85).

Besides beakers, the graves are furnished with short daggers of West European type (Fig. 86 2), and awls of copper

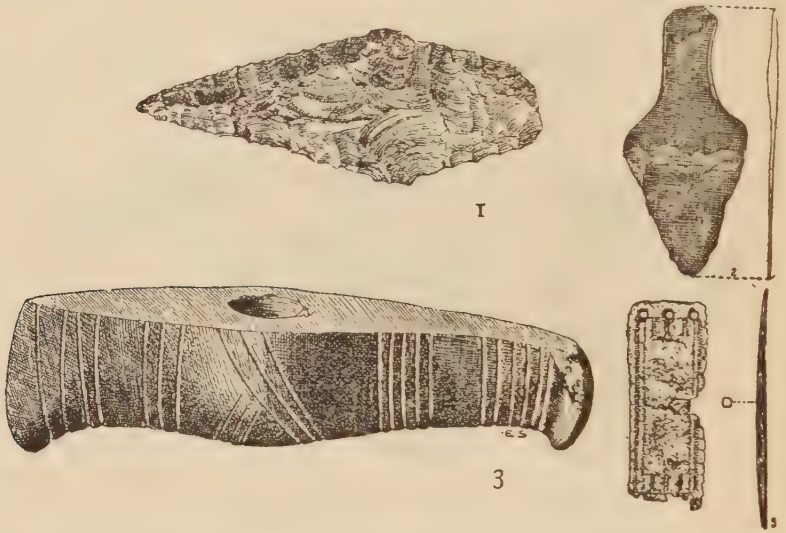


FIG. 86. 1 and 3, Marschwitz. After Seger (½). 2, 4, and 5, Bylany. After Schránil (½).

(Fig. 86, 5), flint arrow-heads, buttons with V perforation, and the characteristic " bracers " of stone or bone, all exactly as in Spain, Sardinia, Italy, and South France. In Moravia and Bohemia, little strips of gold leaf (Fig. 86, 4) as in Brittany and South France, amber beads and ring pendants of bone[2] enrich the grave furniture. Some bell-beaker skulls have been trepanned,[3] the first instances of that operation in Central Europe.

[1] Cf. *W.P.Z.*, VI, pp. 192, 41ff. Åberg, *Iberic*, pp. 191ff. (12) p. 90.
[2] (2) ii. fig. 25.
[3] *P.A.*, XXX, pp. 78f.

The bell-beaker folk cannot have been numerous since they are met only in isolated graves, never in large cemeteries. But their advent completely revolutionized civilization in Central Europe ; for they were not only warriors, but as we have seen elsewhere, also prospectors and traders. They opened up the Brenner route for the amber trade, so linking the Elbe valley to the Adriatic. They may have helped to discover the tin deposits of Bohemia and so prepared the way for the Central European bronze age. But for that a second factor was needed and to it we now turn.

The southern counterpart of the " Nordic " invaders who spread their battle-axes of stone throughout the upper Danubian province were warriors who introduced copper battle-axes into Hungary and Jugoslavia. Some of the same people who invaded Moravia and Silesia may indeed be responsible for some cord-ornamented sherds found in North Hungary and in Transylvania.[1] But the principal evidence for intrusions at this epoch is furnished by the copper battle-axes. We have already seen that towards the end of Danubian II copper axe-adzes began to percolate into the province. The distribution of the axes of type A (Fig. 87, 1 and 3), was strictly easterly, and so they connect on through Transylvania, Galicia and the Ukraine with the Kuban (Map II). But in the full copper age, period III, the axe-adze was manufactured locally in Hungary. Owing to the method of punching the hole through the red-hot copper, the local type C is distinguished by a tubular projection round the socket (Fig. 87, 2 and 4). Its centre is Transylvania and East Hungary. Thence it is diffused southward into Bosnia and Serbia,[2] westward along the Save and Drave to the Adriatic and the Etsch valley,[3] northward across Moravia and Bohemia[4] to Saxony[5] (Map III).

About the same time the single-bladed axes like Fig. 87, 5-7, began to come in. Their distribution is likewise peculiarly eastern. There are four specimens from Poznania ; in Roumania and Transylvania they are common ; in Hungary west of the Danube they are rare and none are reported from

[1] *Dolgozatok*, VI, pp. 1ff.
[2] *W.M.B.H.*, XI, pp. 52f. Hungary east of the Theiss 43 specimens, Serbia 29, Bosnia 12, Slavonia 13.
[3] *JfA.* VI, p. 60, figs. 18-19.
[4] (12) p. 25 and fig. 26.
[5] *J.S.T.*, X, pl. X, 1.

Bohemia or Moravia; on the other hand they reach nearly as far through Bosnia and Croatia as the axe-adzes of type C. Now these single-bladed axes are not Ægean forms. On the other hand they are common in South Russia. So they confirm the view that the axe-adzes also come from the east. G. Nagy is therefore justified in connecting the flood of copper battle-

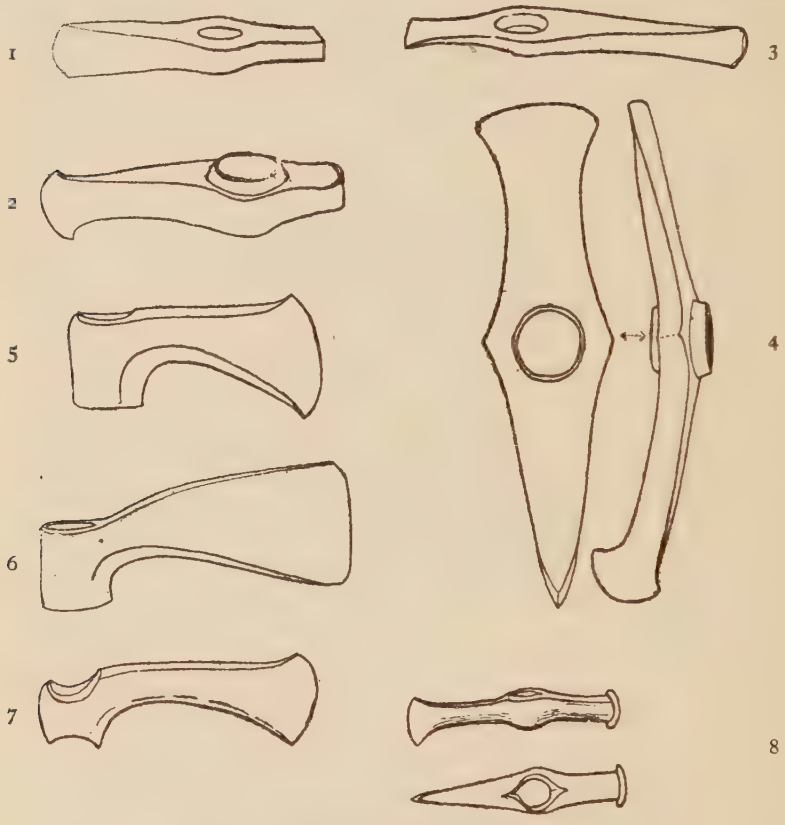


Fig. 87. Copper axes, Hungary (¼).

axes with nomads coming from the east, precursors of the Scyths.[1] This author dates the invasion late in the bronze age; and indeed a warning against attributing a high antiquity to an object just because it is of copper, is needed.[2]

[1] *Arch. Ert.*, XXXIII, pp. 295ff.

[2] Axes like Fig. 87, 5, were being cast in the Middle Bronze Age at the same time as socketed spear-heads—*Dolgozatok* III, figs. 56-57. An L.M. III type of sword in copper is figured in (7) p. 77.

But it is highly probable that the objects under discussion and consequently their makers do belong to period III, and mark an invasion from the east contemporary with the "Nordic" incursions into Silesia and Moravia.

Some such phenomenon is needed to explain why the bell-beaker prospectors were stopped short near Buda-Pest, missing the El Dorado of Transylvania. And the "stone age" barrows of Transylvania contain copper objects with long-headed skeletons.[1] Even in Hungary and Slavonia several copper-age graves are known.[2]

Possibly Hungary, like Bohemia, may have suffered from a simultaneous descent of Alpines from the west. Though the date of the Hungarian pile-dwellings is uncertain and their very existence dubious—a few posts do not make a lake-dwelling—it seems that structures like the more famous settlements on the Swiss lakes did really exist at Toszeg near Szolnok,[3] on the Danube near Pest,[4] and further south at Gerjen (Tolna County).[5] The lower levels at these sites may just possibly be the result of an occupation in period III, but the published evidence proves nothing. Again, the so-called Slavonian pottery, of very uncertain context, is so like that of the lake-dwellings of Upper Austria that it may be due to a kindred folk.[6]

However these intruders did not annihilate the old Danubian population as the *Spondylus* shells in the aforementioned copper age graves show. In fact even in the Middle Bronze Age we can trace in the pottery and figurines the influence of the Danubian peasants who may have formed the substratum of the population. But the dominant element from the copper age was the battle-axe folk. They and their weapons gave its individuality to the succeeding bronze age. But though the eastern types are the determining factor, South Russia was not the only formative influence.

Already in 1898 Myres foresaw that Cypriote and Troadic influences were at work in Hungary.[7] The proof of intercourse

[1] At Vladhazan *Alsofehermegyei Monographii*, I, 18, and at Bedelom, *Arch. Ert.*, 1895, p. 417.

[2] County Veszprem with *Spondylus* shell, and an axe-adze *ZfE.*, 1896, p. 81; near Vukovar with *Spondylus* shells, copper diadems and a fragmentary axe, *Vjesnik*, VI, pp. 61f, figs. 18-20.

[3] *Arch. Ert.*, IX, p. 146.

[4] *C.I.A.*, VIII, pp. 18f.

[5] (6) pp. 409ff.

[6] (1) pp. 338ff, with figures.

[7] *J.R.A.I.*, 1898.

with the North Ægean is seen in the daggers of Cypriote type (like Fig. 22, 1) from Transylvania, from near Arad and from Stillfried in Lower Austria[1] (Map IV), and in knot-headed pins (like Fig. 29, 5) in Hungary and Bohemia. The copper armband (like that of Fig. 91, 11-12) from a XIIIth dynasty house at Kahun[2] may be a reflex of this intercourse; for the type seems to belong to the end of the Hungarian copper age. The result of this trade was to unite Hungarian copper and Bohemian tin and thus it was the second factor in the creation of the Central European bronze age. The latter began where the tin was, and so we will return to Bohemia.

Very soon after the arrival of the bell-beaker folk arose the Marschwitz culture. In Silesia this culture is known from flat-graves with contracted skeletons. The usual grave-goods are pouched jugs (Fig. 88), stone battle-axes with semi-circular

1 2 3 4

FIG. 88. Marschwitz pottery. 1 and 2, Silesia; 3 and 4, Bohemia. After Stocký. (⅛).

cross-section (Fig. 86, 3), flint daggers imitating the West European copper daggers (Fig. 86, 1), and bracers, together with awls or rings of poor bronze wire.[3] This inventory shows at once the influence of the bell-beaker group, but the characteristic battle-axes range Marschwitz among the eastern cultures.[4] Similar vases and axes are found in barrows in Eastern Moravia,[5] while pottery of the same type constitutes the "pre-Aunjetitz" group of Bohemia,[6] and recurs in early

[1] (7) p. 77; *ZfE.*, 1896, fig. 39; *W.P.Z.*, III, p. 20.

[2] Petrie, *Illahun, Kahun and Gurob*, p. 12, pl. XIII, 18. A rather similar object comes from a Middle Hittite grave in Syria, L.A.A.A., VI, p. 91, pl. XXI.

[3] *S.V.n.F.*, III, p. 38.

[4] Seger classes this pottery as corded ware, but the only link with that group is an occasional "flower-pot" of the Lower Oder type and rare cord imprints on the jugs.

[5] (10) pp. 152ff, figs. 84, 89 and 90.

[6] *W.P.Z.*, V, pp. 52ff.

bronze age graves at Straubing in Bavaria.[1] The relative position of Marschwitz at the very end of period III is fixed by the position of such graves at Nosswitz in Silesia overlying deserted " Nordic " huts of period IIIA.

During the Marschwitz period the impulses radiating from Troy through Hungary and then those mediated by Upper Italy were being focussed in Bohemia round the tin deposits and the amber trade route along the Elbe. Intercourse with Troy is seen in a knot-headed pin (Fig. 89, o) from a Marschwitz (pre-Aunjetitz) grave at Velka Ves and the Marschwitz battle-axe of stone which we have mentioned at Troy is clearly its reflex. At the same time a round-heeled dagger of Italian type whose genesis out of Minoan and West European types in Upper Italy will be described in chapter XVII has been found in a grave with a bell-beaker at Couš, likewise in Bohemia.[2] This convergence of south-western and south-eastern influence must have taken place as the Trojan connections show at latest during the nineteenth century B.C. Its result was the creation of an independent bronze age in the eighteenth century.

The Early Bronze Age

The first original bronze age civilization of Central Europe is called, after the great cemetery south of Prague, the Aunjetitz culture. It is represented by depôts and by flat graves containing contracted skeletons in Silesia,[3] Saxony,[4] Moravia, Bohemia and Bavaria, with later ramifications in Lower Austria and North Hungary. Like the Danubian settlements and the bell-beakers the Aunjetitz graves are not found north of a line running through Magdeburg from Glogau to Brunswick.

Its authors were a long-headed race, though the skull-forms showed an admixture with the bell-beaker folk. Similarly the pottery is a direct outcome of that of the preceding epoch. The typical Aunjetitz mug is just a Marschwitz pouched jug made angular. Other shapes illustrate the survival of types such as the tripod bowl associated locally with the bell-beaker, jugs of the " Nordic " intruders, and old Danubian forms.

[1] *P.Z.*, IV, p. 64, fig. 18.
[2] (12) p. 100.
[3] *Führer*, p. 13 and pl. IV.
[4] *J.S.T.*, IV, pp. 1ff.; VI, p. 30; *P.Z.*, III, p. 301.

So in Silesia degenerate Marschwitz stone-axes are found in Aunjetitz graves, while in Bohemia horn axes with square shaft-holes were used (cf. Fig. 133, b).

The metal inventory[1] exhibits a mixture of south-eastern and south-western types. The pin that is distinctive of the epoch is the result of casting in a mould a knot-headed pin (Fig. 89). The earrings of twisted gold or bronze wire (Fig. 89, 4-5) are poor imitations of the basket-shaped earrings of Troy II. On the other hand the round-heeled daggers

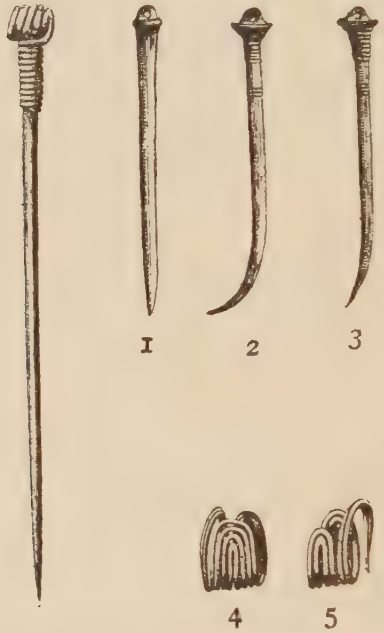
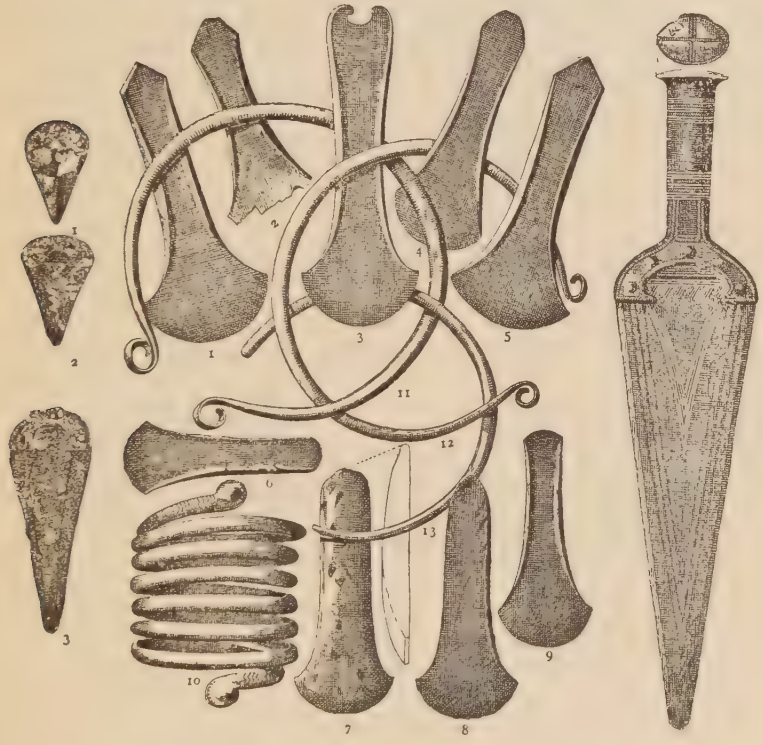


Fig. 89. 1-3, Aunjetitz pins; 4-5, earrings. o from Marschwitz grave. After Schránil. ($\frac{1}{2}$).

(Fig. 90) are Italian and the flanged celt (Fig. 91, 1-2) may have been invented in Upper Italy or Bohemia. Finally necklaces of double strings of amber beads of types recurring in the Danish megalith graves and British round barrows reveal a staple trade article that brought Bohemia into touch with the south. The forms just enumerated constitute the characteristic types of the Early Bronze Age or period IV on the Danube.

[1] For details cf. (12).

The same influences which had promoted the first bronze age fostered its development. From the south-east came an axe of Cypriote or Syrian type, pedestalled boxes like the Bulgarian example of Fig. 74, 6, very rare bronze battle-axes of types found in the Middle Bronze Age of Hungary, and, late in the period, eyelet pins. Owing to the amber trade with the Adriatic, North Italian relations were specially intimate.



90 91 92

FIG. 90. Daggers from Aunjetitz graves (¼).
FIG. 91. Depôt of Sobochleby (¼).
FIG. 92. Dagger of Italian type (¼). All after Schránil.

Mature Aunjetitz deposits contain Italian celts with indented butts and bronze-hilted daggers (Fig. 92). Rather later trilobate pins (Fig. 93, 8), dated in Italy to Bronze II[1], were introduced from the same quarter.

[1] Montelius *V.C.I.*, pl. 3.

Naturally the amber did not stop short in Italy. A counterpart to the amber treasures of Kakovatos and L.M.I. Crete was a clay cup imitating the gold Vapheio type of Fig. 18, from an Aunjetitz cemetery near Nienhagen[1] in Saxony.

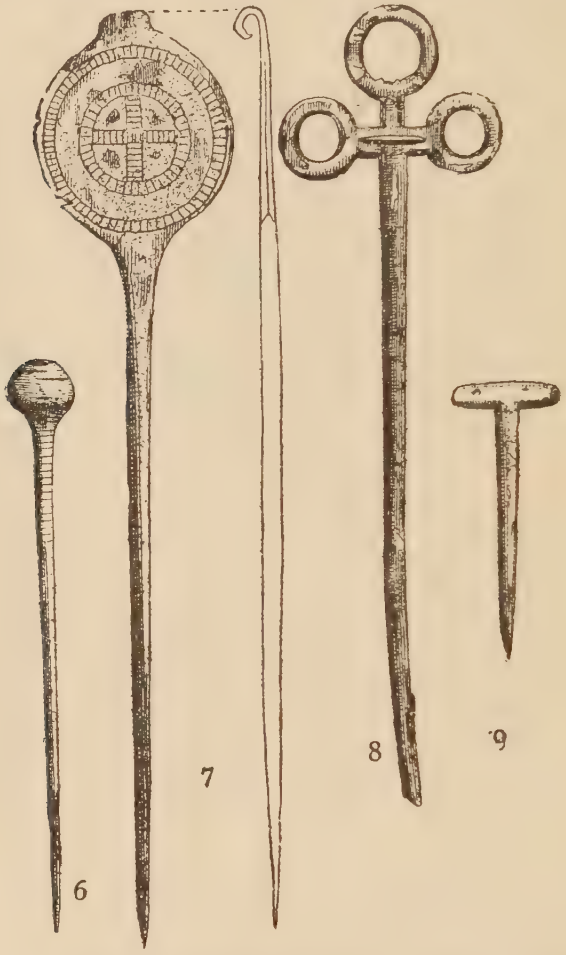


Fig. 93. Pins from late Aunjetitz graves. After Schránil ($\frac{1}{2}$).

Hubert Schmidt has very plausibly suggested that the spiral earrings from the later Shaft Graves of Mycenæ are derived from Aunjetitz models. Finally a curious parallelism with the

[1] *J.S.T.*, X, pl. X, 5. Unfortunately the circumstances of its discovery are not quite certain.

Early Bronze Age of Spain must be noticed. The angular Aunjetitz mug resembles not only in form, but also in technique the vases from El Argar. But the Bohemian form has a perfectly good local explanation and so cannot be derived from the Spanish. Moreover the typical Spanish weapon, the halberd, is never found in true Aunjetitz graves, though two specimens have lately been discovered with burials of the same period or slightly later in Lower Austria.[1] Hence the Spanish influence which Schmidt and Schuchhardt believe they can detect in the Central European bronze age seems in reality to be restricted to the preceding epoch when the bell-beaker arrived from the Peninsula. The later similarities may be due to a parallel development of this common groundwork.

The connections with the Ægean mentioned above, supplemented by the Italian evidence cited in a later chapter, prove that the Aunjetitz culture began in the eighteenth century and was mature by 1600 B.C. Thus the Aunjetitz people had created by that date an independent bronze-using civilization based on the utilization of local resources and the co-ordination of the external contributions made by foreign countries into an unitary and self-contained whole. Aunjetitz is the basis on which the Nordic and Hungarian bronze age civilizations were built. But with this achievement the resources of the Bohemians seem to have become exhausted. The local Aunjetitz culture made little progress till in the fourteenth or thirteenth century it fell a prey to invaders from the north-east and the north-west. The spirit of progress had now moved to Germany and Hungary. The achievement of the former province will occupy us in chapter XV. Here the Middle Bronze Age of Hungary must be mentioned.

The Middle Bronze Age

The beginnings of the bronze age in Hungary are still obscure. Probably the copper age overlaps with the earlier phases of the Aunjetitz period in Bohemia. And in the Early Bronze Age itself Hungary was no cultural unity. In the north as at Gata (Slovakia) flat graves prevailed with some Aunjetitz forms. Notable are the raquet pins like Fig. 93, 7,

[1] Information kindly conveyed in a letter from Dr. Adolf Mahr of Vienna.

and trumpet-mouthed urns.[1] East of the Danube and in Transylvania barrows covering contracted skeletons belong to the battle-axe folk.[2] To them may be attributed the foundation of the fortified settlement of Perjamos near Clausenburg, and that of Nagy Sancz near Arad.[3]

By the Middle Bronze Age the battle-axe folk had welded the other elements in the population, Alpine pile-dwellers and survivors of the Danubian peasants, into an unity; for the uniformity of the pottery betokens a single harmonious culture and the characteristic battle-axes prove who was in

1 2

FIG. 94. 1, Kličevac idol ($\frac{1}{6}$); 2, Pannonian urn from Bijelom Brdo ($\frac{1}{2}$).

the ascendant. The furniture of a grave at Bijelom Brdo in Slavonia[4] and the depôt of Rakos Palota[5] allow Pannonian ware to be connected with the numerous stray bronzes and depôts which constitute the middle typological period of the Hungarian bronze age.

The civilization of this period is noble and original. Pannonian ware, despite local varieties both in form and

[1] (9) pl. II ; cf. *P.Z.*, XII, p. 119.
[2] (9) pl. I and *Arch. Ert.*, XXIV, p. 85, fig.
[3] *Dolgozatok*, III, pp. 1ff.
[4] *Vjesnik*, VII, p. 63, figs. 24-27.
[5] (8) pl. LXXXVI.

decoration, constitutes an unitary group from western Bulgaria (Vidin) and Slavonia in the south to Melk in Lower Austria with its centre in the Banat.[1] It is one of the finest prehistoric pot-fabrics of Europe. The vases are grey or dark-brown and are richly ornamented with spirals and other motives incised, stamped, or executed with a toothed wheel and often incrusted with white, exceptionally with red, paste. Among the almost infinite variety of forms, the trumpet-mouths of the urns and amphoræ, the tendency to two-storied shapes, and a liking for a crescent-shaped indent at the junction of rim and handle are conspicuous features (Fig. 94, 2). Many forms are distinctly metallic, but the survival of the Danubian tradition

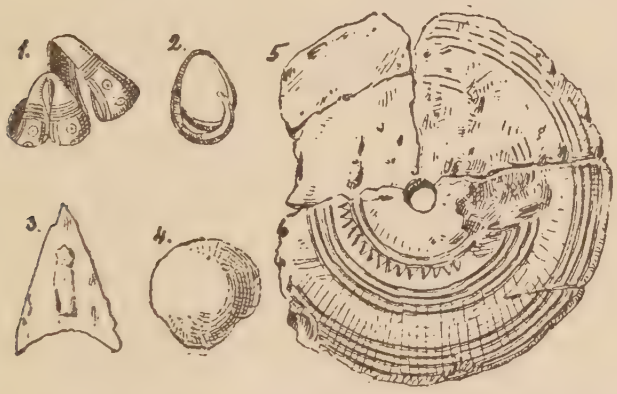


Fig. 95. Objects found in a grave with Fig. 94, 2, a bracelet and pins like Fig. 96, 3 and 4 respectively. 1 and 2, gold; 3 and 4, bronze; 5, bone. All (1/1).

can be recognized both in the shapes, e.g., pedestalled bowls, and in ornaments such as the spiral.

The clay figurines of the period are another legacy from the stone age.[2] But the goddess was no longer naked. An idol decorated in Pannonian style from the necropolis of Kličevac in Serbia[3] (Fig. 94, 1), illustrates both the female costume of the period and the manner in which the metal ornaments so common in the depôts were actually worn.

[1] (1) pp. 405 ff, with illustrations.
[2] Illustrated (1) pp. 409 and 411.
[3] *R.A.*, 1902, pp. 172ff.

Pannonian ware is found both in open settlements like Nagy Sancz (the middle and upper strata),[1] on fortified hilltops like Lengyel, and in the "pile-dwellings" of Gerjen. Again it is found both with extended[2] and contracted[3] skeletons, and with cremated and inhumed bones. We must then conclude that the rite of cremation came in during the period.

But the great achievement of Hungary was the creation of a splendid and original school of metallurgy. For its foundation the Hungarian bronze age was indebted to Bohemia; technically Upper Italy contributed its share; the rich spiral decoration especially in the manner of its application to sword-blades points to Crete and Mycenæ. But the final product has a noble individuality.[4] The most conspicuous weapons, the battle-axes and hammer-axes (Fig. 96, 5) go back to the copper age and prove the dominance of the battle-axe element in the population. The same people may have been responsible for an invention which was destined to revolutionize warfare and change the face of Europe.

Hitherto all daggers, the Minoan rapiers and the El Argar "swords" had been designed for thrusting. The weight was therefore concentrated in the hilt. In the Middle Bronze Age a new sword was created with the weight on the blade adapted for slashing. The commonest form, Naue's type III,[5] is a bronze-hilted Italian dagger with the blade elongated and widened near the point to give weight to the blow. The other variety, type II, is a Mycenean rapier with flanged hilt in which the blade has been widened and sharpened at the edges for cutting. Type III seems to appear almost simultaneously in the North and in Hungary and must have originated in one of those two areas; for the presupposition of the slashing sword is a weapon which was swung by the wielder to give a blow. That condition is fulfilled equally by the German halberds of the Early Bronze Age and the Hungarian battle-axes.

Now in Denmark Sophus Müller[6] states that type II is later than the bronze-hilted sword and if this result can be

[1] *Dolgozatok*, figs. 16-45.
[2] According to (9).
[3] At Bijelom Brdo. An identical urn in a neighbouring grave contained cremated remains. *Vjesnik*, VII, l.c.
[4] Types illustrated (9) pls. IV. and V.
[5] Naue, *Die vorromische Schwerter.*
[6] In period III, *M.S.A.N.*, 1908-9, p. 29.

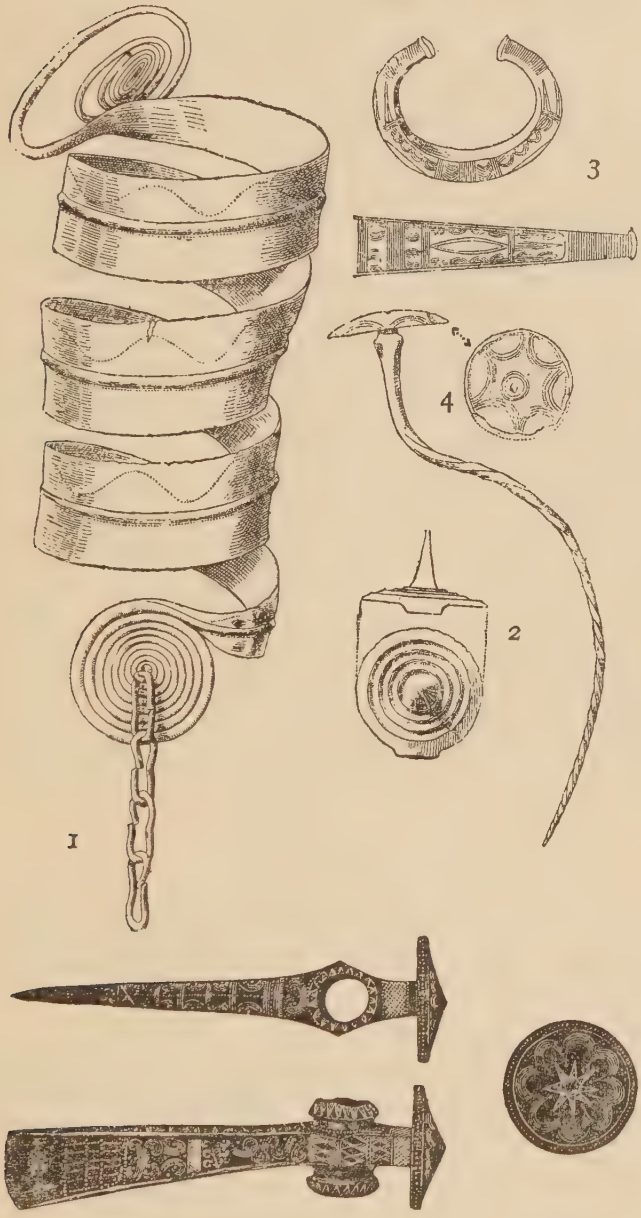


FIG. 96. 1-4, Depôt of Racz Egresi; 5, Axe, type of Also Nemedi. 1 and 3 ($\frac{1}{3}$); 2 and 4 ($\frac{2}{3}$); 5 ($\frac{1}{4}$).

generalized the rival claims of Hungary and North Germany to the invention of the slashing sword are equal. On the other hand Peake[1] advances cogent arguments for the view that type II originated in Hungary. Both he and Naue hold that both types were at least contemporary there. Moreover the oldest northern swords are richly decorated with spirals, a motive which was foreign to the north, but at home in the Danube valley. So perhaps the balance of evidence upholds Hungary's claim.

Thus by the Middle Bronze Age Hungary had not only achieved an individual art, industry, and civilization of its own; it was armed to dominate its former masters in the south. The appearance of a derivative variant of type II swords in late Mycenean surroundings in Greece and in Egypt in the thirteenth century symbolizes the passing of the cultural centre of Europe from the Mediterranean basin to the Danube valley and the ultimate ascendency of continental culture. At the same time these intruders in the Eastern Mediterranean show that the Middle Bronze Age in the Danube valley was mature by the fourteenth century B.C.[2]

It would take us too far to attempt to describe the typological wealth of the Hungarian bronze age, to discuss its relations with the Italian, or to pursue its influence marked by battle-axes and depôts of ornaments through Silesia to Scandinavia. Some leading types are therefore illustrated in Fig. 96.

Conclusion

The cultural province whose fortunes have just been sketched turns out to be the pivot of early civilization in continental Europe. The Danubian I peasants in their gradual expansion carried with them the domestic animals and cultivated plants and diffused the "neolithic arts" among their western neighbours. The incursion of nomads prevented stagnation in the north and introduced the Hungarians to the metal tools and weapons invented long before by the Sumerians. Then the beaker folk linked the Danube commercially with the Ægean and Trojan metallurgy discovered

[1] *Bronze Age*, p. 88.

[2] The swords of L.M. III type from Nyitra-Novak are assigned by Miské to the Late Bronze Age (9), pl. VIII, 7.

the tin of Bohemia. Out of these impulses arose the Aunjetitz culture upon which both the Nordic and Hungarian bronze ages are based. Finally the Danubians in the Hungarian plain inspired by Bohemian and Mycenean models created out of their own copper culture a Central European civilization which could vindicate its independence of the Mediterranean by force of arms.

The phases of this process can be divided into chronological periods which may be given an absolute value by synchronisms with the Ægean. The sequence of cultures itself in the several parts of the province, Serbia, Moravia, Silesia, and Bohemia, is firmly founded on stratigraphical observations. Danubian II can with certainty be connected with the beginning of period III in Thessaly and the earlier phases of Troy II. The last section of period III represented by Marschwitz again shows connections with Troy in the third structural phase. The mature Aunjetitz culture shows Minoan relations belonging to the sixteenth century and the same line of argument allows us to put its maturity rather before 1600 B.C. Finally the Middle Bronze Age is shown by the appearance of derivative types in Greece and Egypt to have been mature by 1300 B.C. These results are set out in the table on page 203. The periods so constituted will form the basis for the chronology in the subsequent chapters where the Italian and British data will be seen to confirm the absolute dates here set out.

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South-west Germany.

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Period.	Bohemia.	Silesia.	Moravia.	Hungary.	Serbia.	B.C.
I a	Jordansmühl pottery: Spiral-meander and stroke-ornamented ware	Spiral-meander ware (Nosswitz	Spiral-meander ware	?	Vinča I	before 2500
I b			Stroke-ornamented ware			
II		Ottitz Jordansmühl	Crusted wares	Lengyel	Vinča II	2500 to 2200
III a	Nordic culture	Nordic culture	Nordic culture	Copper age and Bell-beaker	?Vinča III	2200 to 1750
III b	Corded ware Bell-beaker and pre-Aunjetitz culture		Corded ware Bell-beaker and Marschwitz culture		?	
III c		Bell-beaker and Marschwitz culture				
IV Early Bronze Age	Aunjetitz culture	Aunjetitz culture	Aunjetitz culture	Gata		1750 to 1400
V Middle Bronze Age		Middle Bronze Age		Middle Bronze Age	Kličevac	1400 to 1200

CHAPTER XIII

The Meeting of East and West in Scandinavia

To understand the "Nordic" battle-axe cultures which intruded into the Danubian province in period III we must now return to Scandinavia and take up the story of culture there at the critical period where we left it in chapter I. We then raised the question whether the neolithic civilization of Scandinavia was a spontaneous local creation or whether it was introduced or inspired from without. Now Montelius divided the new stone age in the north into four periods of which the first is represented by polished flint celts with pointed butts. However Montelius' period I is really an empty name. No graves or settlements are known containing the typical implement and so it cannot be said whether a neolithic culture prevailed in the period—if such a period existed at all. And indeed its very existence has been doubted by high authorities; [1] for the celts with pointed butts are rare and to speak of a period with no content is absurd.

The true neolithic culture may then be said to begin with the thin-butted celt representing Montelius' period II (Fig. 97, 2). Agriculture, domesticated animals, and pottery of advanced forms are attested for this epoch. But now, instead of just leaving the dead under the settlements, dolmens were built to cover the skeletons and regular funeral rites were observed. Kossinna himself admits that the dolmen tomb was introduced from abroad. We now know that the idea came from the south-west. The amber deposits of Jutland are a magnet which must have attracted adventurous mariners to the inhospitable shores of Scandinavia. It may well be that the dolmen-builders were responsible for the introduction of the neolithic arts into Scandinavia.

However the innovations which distinguish the oldest neolithic civilization from the preceding epipalæolithic period

[1] (5) pp. 50 ff., but Sophus Müller ascribes certain isolated objects never found in later graves or settlements to a pre-dolmen period, i.e. Montelius I; (3) p. 58.

cannot all be explained from the west. The pottery found in the dolmens, collared-flasks, funnel-necked beakers, and amphoræ (Fig. 98, 1) are shapes quite foreign to the megalithic tombs in Western Europe. And already at this epoch

Fig. 97. Evolution of the Nordic flint celt. By permission of the Trustees of the British Museum.

polygonal battle-axes (like Fig. 84 b) are said to occur.[1] And besides the dolmen tombs, separate earth graves were in use in the dolmen period. Kossinna ascribes these graves to the older population and regards them as a continuance of the

Fig. 98. 1. Dolmen pottery, (⅛), Denmark. 2 Passage grave pottery, Holland. After Stocký.

epipalæolithic burial rites (*sic.*). Indeed, on Langeland a collared flask was found with two extended skeletons at the top of an old shell-mound left by the epipalæolithic Ertebolle

[1] (3) p. 62 ; the same type is known stray in copper in Sweden.

folk.[1] But kitchen-middens lasted long into the neolithic period and the burials in question were on, rather than in, the mound as had been the rule in epipalæolithic times. And the separate graves of period II[2], just as those of later date, were normally surrounded by a ring of stones exactly like the grave from Silesia shown in Fig. 83, and surmounted by a barrow.

Now, separate graves containing the strange types of vases found in the Danish dolmens, and sometimes also polygonal battle-axes, are distributed widely to the south-east in Silesia and Galicia (Map II). It is true that to Kossinna these flasks and battle-axes mark the route of warlike Indo-germans proceeding from Denmark to colonize South-east Europe.[3] On the other hand the movement may, as will appear in chapter XV, have been in the opposite direction. The separate graves belonging to period III in Denmark have always been regarded as intrusive. It is possible that the same graves of period II were equally due to invaders and that they may ultimately be connected with the battle-axe folk of South Russia.

In reality the separate graves of the dolmen epoch with their stone-walling and low barrows are no more a continuation of the epipalæolithic burial rites than are the contemporary dolmens; for there were no epipalæolithic burial rites. The dead were just left without funeral gifts under the settlements. And even in the dolmen period descendants of the old indigenous population living in inner Sweden and Norway maintained the old practice. Nor are the dolmen vases descendants of the Ertebolle pots of epipalæolithic times. The evolution of the latter may be seen among the same indigenous people of Sweden. It led to a quite different group of forms which survive into period III and will be described in the next chapter. In fact the existence of these descendants of the epipalæolithic folk in inner Sweden is fatal to the theory of a spontaneous generation of neolithic culture in Scandinavia.

The dolmens and true separate graves are restricted to the coasts and Jutland (Map II), and it is only these regions that have furnished evidence for the practice of agriculture

[1] *Fv.*, 1917, pp. 85f.

[2] *Aarbøger för nordiske oudkyndighed og historie*, 1917, pp. 131ff.

[3] Cf. the able criticism of this view by Sophus Müller (3) pp. 64 and 100ff.

and the domestication of animals in period II. The natives of inner Sweden and Norway on the other hand persisted in just the same savage life as food-gatherers as had been general in epipalæolithic times. The contrast here established conclusively demonstrates that the neolithic arts were introduced from without. The only question is whether we should reckon with an immigration from the east in addition to one from the west. That must await a later chapter.

Provisionally we may distinguish three cultural groups in Scandinavia in period II: the megalith builders on the coasts of Denmark, Sweden, and perhaps Pomerania, the separate graves in Jutland, South Sweden and some Danish islands, and the food-gatherers descended from the epipalæolithic peoples of Maglemose and Ertebolle-Nøstvet in Norway and inner Sweden.

Period III

Just the same three elements may be distinguished in the succeeding epoch when the dolmen had been expanded into the passage grave (Fig. 53, II A), and the thin-butted celt gave place to the thick-butted type (Fig. 97, 3).

The megalith culture now extended its sway inland. Passage graves were built in North Germany and all along the North Sea coasts to the Zuyder Zee. The area of dispersion of thick-butted celts is equally enlarged (Map III). The megalith-builders lived in round pit-dwellings. They had domesticated horses, sheep, swine and cattle, and cultivated barley, wheat, and flax.[1] The needs of agriculture may have been the prime cause for the expansion of the megalithic culture. The makers of the great tombs were also warlike, but they engaged in trade and must have sailed the seas in pursuit of merchandise. Their tools and weapons display great ingenuity in adapting to the needs of life refractory materials.

The rich furniture of the great stone graves gives us the best idea of the high civilization of the epoch. Of course the passage graves are collective sepulchres and as such were used by the same clan for many generations. A hundred persons might be interred in the same tomb. Among the earlier

[1] Montelius *Kulturgeschichte Schwedens*, p. 14.

elements in the grave furniture may be reckoned, thick-butted celts of polished flint, transverse arrow-heads and the type with triangular cross-section (Fig. 99, 4), disc-shaped mace-heads, double-bladed battle-axes of stone (Fig. 99, 2) "arrow-straighteners" and axe-shaped beads of amber (Fig. 99, 1). The early passage grave vases were very angular. The decoration, executed by a braid of twisted cords supplemented by stamps, had close analogies with that of the chalcolithic period of Spain and Sardinia and was perhaps inspired from that quarter. The tombs of Holland and North-west Germany show earlier features. Here the collared flask, albeit in a degenerate form, and the funnel-necked beaker, continued in use in the passage graves (Fig. 98, 2), and the Dutch tombs

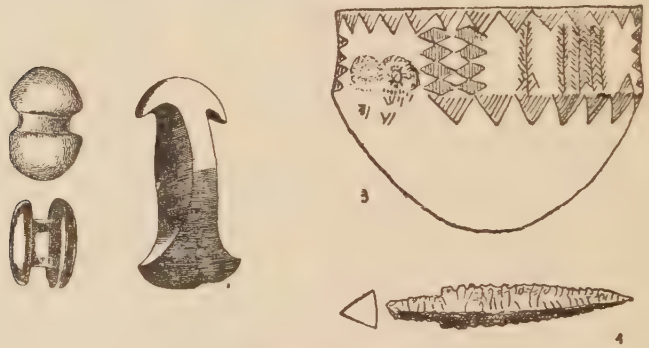


FIG. 99. Passage grave types, 1 (⅔); 2 (¼); 3 (⅛); 4 (⅛).

contain a small percentage of thin-butted celts.[1] Hence the colonization of the North Sea coast must go back to the end of period II.

The later element in the Scandinavian passage graves includes thick-butted celts that have been flaked rather than polished, finely flaked lanceolate daggers, notched and barbed arrow-heads of flint, bracers, buttons with V perforation and shale pendants like Fig. 101, 1. The pottery now includes the well-known hanging vases. The ornamentation is in this phase generally grouped in vertical patterns and is executed with the serrated edge of a *Cardium* shell or a bone comb. A bowl like Fig. 99, 3, has almost exact parallels, even to the stags, at Los Millares in Spain (cf. Fig. 1D). To the same epoch

[1] *P.Z.*, V, pp. 44of.

belong intrusive zoned beakers from South-west Germany[1] and occasional representatives of separate grave pottery. In Holland the zoned beakers, fragments of bronze, and jet buttons from a tomb near Drouwen, may belong to the same late phase, but in general the megalith culture there early gave place to that of the separate graves.

The amber trade brought the megalith-builders into contact with the west : the results are seen in the pottery and bracers and also in celtiform amulets of bone. The relations with Britain were specially close and passage grave forms recur in our bronze age barrows. Connections with the south during the first phase are illustrated by socketed ladles derived from the Danubian II type.[2] In the later phase, after the amber trade route along the Elbe had been opened up, these Danubian relations became more intimate. The amber necklaces from Aunjetitz graves have a counterpart in the bone copies of Aunjetitz pins (like Fig. 89, 1) and in very rare metal pins found among the later elements in the Danish megaliths.[3] Thus there is no doubt that the stone age lasted in Scandinavia well after the bronze age had begun in both Britain and Bohemia.

The culture of the separate graves presents a sharp contrast to that just described. Its authors were warriors and seem to have lived rather on tribute exacted from the megalith-building traders than to have themselves engaged in commerce. They used battle-axes with one hammer end, and spheriod instead of disc-shaped mace-heads. So they wore amber in the form of rings and flat buttons. Their pottery was of the beaker type and at first was ornamented by horizontal cord impressions round the neck of the vase. Both the form and decoration of these vases may be traced back to the period of the dolmen and thin-butted celt.[4]

The dead were buried under barrows. The oldest sepulchres, called " bottom graves," were pits dug in the virgin soil. A fire had often been kindled in the pit, perhaps for a funeral feast, before the corpse was laid to rest. The same barrow was often made to cover a number of successive

[1] *Nord. Fort.*, II, p. 117, fig. 81.

[2] Fig. 14, *Nord. Fort.* II, p. 86, fig. 61, *P.Z.* V, no. 229, p. 442 (Drenthe, Holland), specimen from NW. Germany at Hanover.

[3] *Nord. Fort.* II, figs. 49 and 52 ; cf. Lissauer in *ZfE.* XXXIX, p. 792.

[4] (3) p. 117, fig. 82.

interments. The furniture from the graves at different levels, "bottom graves" (Undergrave), "ground graves" (Bundgrave), and finally, in the mound itself, "upper graves" (Overgrave), illustrates the development of the leading types as in column I of Fig. 100.

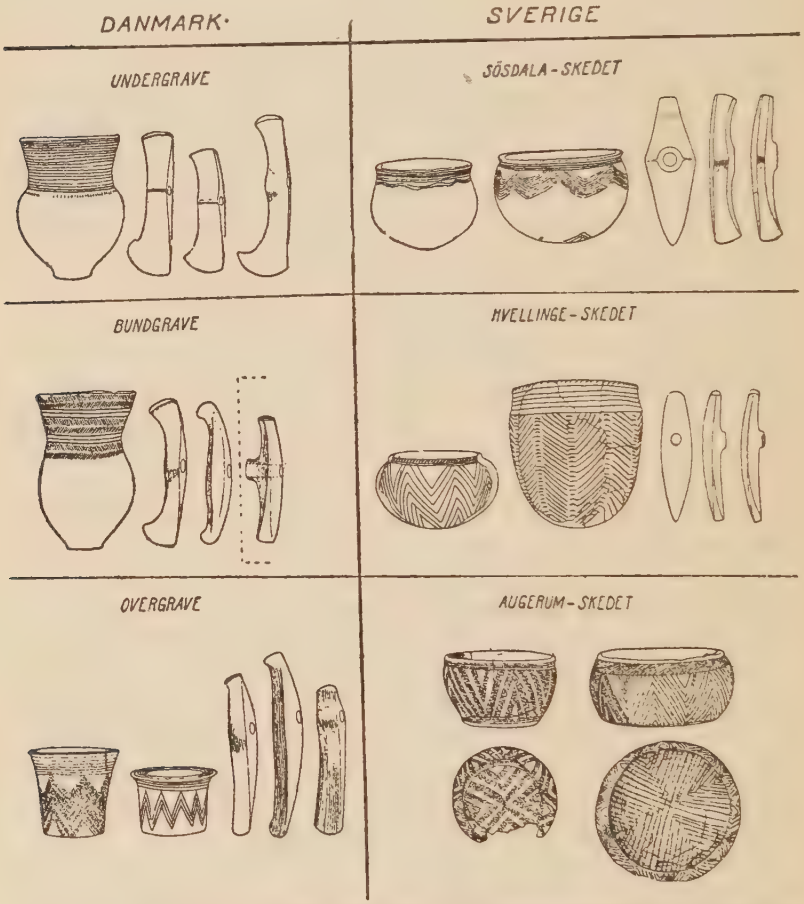


FIG. 100. Pottery and battle-axes from the separate graves of Jutland (left) and Sweden (right). The oldest on top. After Fv. 1922. ($\frac{1}{10}$).

In Denmark the separate graves occupy the interior of Jutland to the exclusion of megalithic tombs. Later graves of the same family with a furniture corresponding to that of the Danish "ground graves" are met in Hanover[1] and in

[1] *Mannus* I, pp. 267f.

Holland[1] the same civilization almost entirely replaced that of the passage graves in their later phases. On the other hand the barrows with corded-ware in Thuringia form a series which seems parallel to that of Jutland from the " bottom graves " onward. Finally in South Sweden separate graves, with thin-butted celts, going back to period II, are known.[2] But the older stages of this culture are poorly represented and look as if they were due to stray intruders. Even in the Sösdala phase in Sweden the separate grave folk were using " boat-axes," which seem parallel rather to the types of the Danish " ground graves " than to those of the earlier " bottom graves " to which they are compared by Dr. Eckholm[3] in our Fig. 100. In any case the Swedish battle-axe culture, like that of Thuringia, can hardly be derived from the Danish. All three groups must be due either to separate branches of the same invading stock, or, on Kossinna's view, to parallel developments of the same indigenous culture.

Finally in Norway and Sweden the descendants of the epipalæolithic population lived on as food-gatherers. In the north and east they created the Arctic culture to be described in the next chapter. In South Sweden, however, they gradually and piecemeal assimilated elements of the higher civilization of the western coasts. A very illuminating illustration of the manner in which the superior culture was diffused comes from Östergotland.

On Lake Alvastra a pile-dwelling was built far out in the shallow mere. The bones of wild animals predominated, but swine and cattle may have been domesticated, and the six-eared barley was certainly cultivated. Thick-butted flint celts, double-bladed axes of stone and hammer-shaped amber beads prove that the elements of neolithic culture were here due to the megalithic civilization on the western coasts. But the pottery and the greenstone celts also found at Alvastra were proper to the indigenous population and indeed settlements of the old stock, still living as pure food gatherers, existed only a couple of miles away.[4] To whom then is the pile-dwelling

[1] (1) pp. 41f.

[2] *Fv.*, 1909, p. 107.

[3] cf. *Fv.* 1917,, pp. 67f.; 1921, pp. 53ff. and 1922, pp. 141ff; *Ant. Tids.*, XX, pp. 8ff. Note the occurrence of a crescent-shaped razor belonging to Montelius' period IV in a separate grave at Oj i Köpings—*Fv.* 1909, p. 102.

[4] *Mannus* II, pp. 120ff.

to be ascribed? In epipalæolithic times the indigenous population at Maglemose and Brabrant had lived on raft-dwellings and some of their descendants lived in the same way, at least during the dolmen period, in Skåne.[1] The pile-dwelling can easily be understood if regarded as an improvement of the epipalæolithic raft. Alvastra may then be regarded as a settlement of the indigenous population who had acquired some elements of higher culture from the megalith-builders. So here we have before our very eyes an actual cultural borrowing taking place. A lake-dwelling at Alsen in Holstein of the more primitive platform type, but furnished like a passage grave settlement, may be explained in the same way.

In conclusion, the chronology of periods II and III must be noted. The collared flasks and other vases of dolmen type from grave 28 at Jordansmühl allow the period of the Scandinavian dolmens, Montelius II, to be equated with Danubian II so that it lasts from 2500 B.C. to 2200 B.C. or later. The socketed ladles descended from Danubian II types of Fig. 80, 2, in early passage graves show that period III in the north must have begun at latest very soon after the end of Danubian II. On the other hand the imitations of Aunjetitz pins in later passage graves prove conclusively that the later phase of Montelius' period III of the Nordic stone age is contemporary with the Early Bronze Age in Bohemia, i.e., with Danubian IV. So the passage graves must have been in use from 2200 to 1650 B.C.

Epoch of the Dagger and Long Stone Cist, Montelius IV

Of the three cultures occupying Scandinavia in the passage grave epoch—those of the megalith-builders, of the battle-axe folk, and of the food-gatherers—the second ultimately won the ascendency. Already the appearance of objects proper to late separate graves with the latest interments in Danish passage graves[2] foreshadowed a fusion between the two cultures. This process was completed during the succeeding period.[3]

The distinction between collective and individual interment indeed still persisted. The megalith-builders now erected long

[1] (5) pp. 67 and 76.
[2] *Nord. Fort.* II, p. 118.
[3] For period IV consult *M.S.A.N.*, 1911-12, pp. 282ff.; *Nord. Fort.* I, pp. 157ff.

stone cists or covered galleries like Fig. 54, III B instead of passage graves. And they actually extended their domain into Norway and inner Sweden at the expense of the food-gatherers. In Holland and on the North Sea coasts of Germany however, long stone cists do not occur. That area was completely dominated by the separate grave folk. A few remnants who clung to the old rite of collective interment had retreated southward into Hessen and perhaps into Belgium and North France (Map IV). The long cists in North France, Belgium, Hessen, and Sweden have a holed-stone for the doorway, a feature which is never found in Denmark.

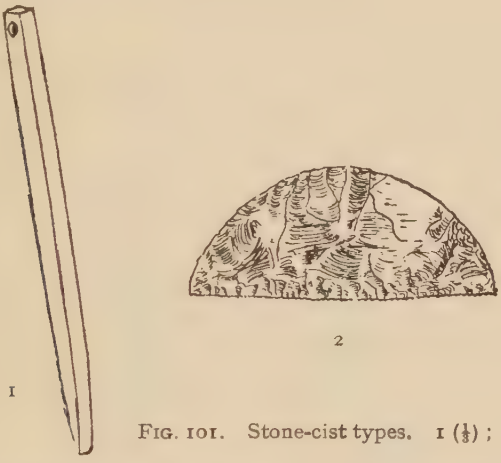


FIG. 101. Stone-cist types. 1 ($\frac{1}{8}$); 2 ($\frac{1}{2}$).

But although the two burial methods existed side by side in Scandinavia, there is now no sharp frontier between the two and the furniture from the long cists is indistinguishable from that of the upper separate graves. It is relatively poor. Axes are rare and degenerate; the typical weapon of the epoch was the wonderfully flaked flint dagger with hilt in the same material, which imitated the Italian bronze-hilted dagger (Fig. 92). Indeed, flint flaking had now reached the acme of its perfection in the north and another characteristic product of this belated industry is the crescent-shaped knife of Fig. 101, 2. The pottery on the other hand was poor and undecorated, the commonest shape being the flower-pot vase as in the "upper graves." Moreover the Scandinavians gave up wearing amber beads and contented themselves with *Unio*

shells, perforated teeth and slate pendants of rectangular section like Fig. 101, 1 for ornaments. The reason may be that the amber was wanted to barter for metal.

Actually metal is very rarely met in the tombs of this epoch. However hollow-headed pins (like Fig. 93, 6) and gold spiral earrings found both in Danish and Swedish cists prove their contemporaneity with the mature bronze age further south.[1] In Schleswig metal was more common and the flint copies are actually found together with the original bronze daggers.[2] Finally in Holstein and Hanover a centre of bronze industry was already in existence and the barrows of the first bronze age there contain slate pendants like those of the Scandinavian cists.[3]

Many of the depôts and stray finds of objects of the Early Bronze Age from Scandinavia may then be assigned to this period. There is no ore in Scandinavia, so that all bronzes had to be imported—at this date ready-made. Most of them, like the bronze-shafted halberds from Sweden, belong to the German types described below. But the amber trade brought in exchange the products of Italian and British foundries. At Fjälkinge in South Sweden British celts and Italian celts like those of Fig. 91, 3 above, of sixteenth century type were associated with Nordic celts.[4] At Pile in the same region silver was found in a depôt and may have come across Russia. The imported bronzes with their parallels in Aunjetitz depôts show that Montelius' period IV is contemporary with the later phases of Danubian IV and may therefore be placed between 1700 and 1500 B.C.

The Scandinavian Bronze Age

By the end of the period of the long cists the fusion of the local populations in South Scandinavia was complete. Henceforth individual interment under barrows in small stone cists or wooden coffins was the rule. And then the Northmen imported not only finished bronzes, but the raw materials, and began to work them themselves. The true Scandinavian bronze age takes up the European tradition in its middle period, when flanged celts with stop-ridges, palstavs, had already been invented. In its originality and wealth of forms the subsequent

[1] (4) p. 229.
[2] *M.S.A.N.*, 1908-9, p. 12.
[3] *ibid*, 1911-2, p. 293.
[4] *Arch.* LXI, p. 156 and figures.

development fulfils the promise of the stone age. Such external inspiration as was now needed came, not as heretofore from the west, Britain, Bohemia, or Italy, but from Hungary. Battle-axes, leaf-shaped swords, coiled cylinders and bracelets terminating in opposed spirals and the delicate spiral decoration of the weapons and ornaments are all exactly paralleled in the Middle Bronze Age of Hungary (Fig. 102).

But the local bronze industry evolved on quite original lines. The socketed celt was created out of the palstav, not from the winged type as in Italy, but by casting in one piece with the celt the bronze ring which had been originally a distinct member added to the palstav to secure it to the haft. The safety-pin, too, probably began from a Scandinavian

FIG. 102. Types of the Scandinavian Bronze Age. (⅔)

adaptation of the eyelet pin found in late Aunjetitz graves in Bohemia. The substitution of a twisted wire for the thread that had at first been passed through the eyelet to fix the pin in the garment, would produce the Nordic fibula with two members (Fig. 102, A).[1] The type was transmitted by trade to Upper Italy, where it became the model for the violin-bow fibula made of a single piece of wire.[2] It follows from this that the Scandinavian bronze age began not later than the fourteenth century B.C. From this point the cultural development of Scandinavia was self-contained and even the rite of cremation came in without any break in the continuity.

On the view set out here then the history of Scandinavia is one of continuous progress. To deny that everything was the spontaneous creation of the epipalæolithic natives and their descendants reflects no discredit on the ancient Teutons. They did create an united nation and a harmonious civilization out of divergent ethnic and cultural elements and in this achievement showed their true originality and genius. The chronology set out here gives an unbroken record of development down to Roman times. The real slanderers are those who ascribe an exaggerated antiquity to the Nordic stone age in order to derive thence the founders of Troy II, the lords of Mycenæ, to say nothing of the Hittites and Sumerians. On the long chronologies of Kossinna, Schmidt, and Schuchhardt, Nordic civilization appears as a barbarous and backward survival when we can first compare it with contemporary civilizations in the south and to introduce continuity into the system long periods of depopulation have to be assumed.

AUTHORITIES

(1) Nils Åberg, *Die Steinzeit in den Niederländern.* (Uppsala, 1916.)
(2) G. Kossinna, *Die Indogermanen*, 1921.
(3) Sophus Müller, *L'âge de la pierre en Schlesvig.* (M.S.A.N., 1913-4.)
(4) Sophus Müller, *L'âge du bronze en Schlesvig.* (*Ibid.*, 1914-5.)
(5) Knut Stjerna, *Före Hällkisttiden. Ant. Tids, XIX* 2. (Swedish. A summary is given of the later sections dealing with period III in *L'Anthr.*, 1910.)

The leading types are well illustrated in :

Sophus Müller, *Ordning af Danemarkes Oldsager* and *Oldtidens Kunst i Danemarke* ; and

Oscar Montelius, *Minnen från vår forntid.* (Stockholm, 1917.)

[1] Kossinna, *Die deutsche Vorgeschichte*, p. 50, fig. 102.

[2] A specimen from the terramara of Servirola ; *cf.* Montelius, *V.C.I*, p. 239, who stoutly denies the northern origin of the safety pin.

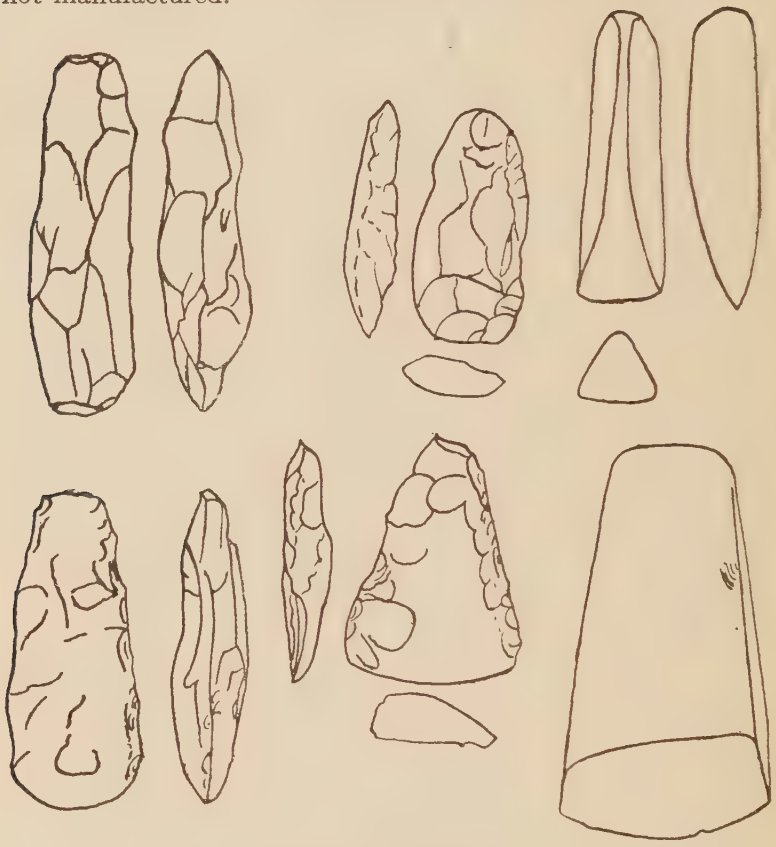
CHAPTER XIV

Food Gatherers and Warriors on the Baltic and in North Russia

The continuations of the Baltic epipalæolithic cultures into neolithic times mentioned in the last chapter may be dismissed in a few words. We have seen in chapter I how the first epipalæolithic culture, that of Maglemose, was diffused round the Baltic in the Ancylus epoch. Some early fisher wandering over the ice may even have reached Finland and dropped his net of lime-bark fibres into the frozen waters of some bay of the Ancylus lake there.[1] But with the net was a diabas celt with ground blade so that Ailio[2] rejects the palæontological dating of the find and attributes it to the full neolithic period. Nor is it quite certain that these northern tracts were occupied during the succeeding period of the Litorina maximum represented by the Ertebolle-Nøstvet phase of culture. In Finland, where the land has been rising, dwelling places which were on the seashore at the time of their occupation by man, but are now 34m. above sea-level, have yielded roughly hacked stone celts like Fig. 103, 2, but no pottery. This culture, called Suomusjärvi, may be partly[3] contemporary with the Ertebolle culture in Denmark, but the influence of the Nordic dolmen civilization seems already traceable in the presence of thin-butted flint celts. In any case the Suomusjärvi culture is not derived directly from Ertebolle, but rather from some parallel culture like that of the bone-users of Kunda in Esthonia. Finally primitive flaked or hacked types of flint and stone found all across Russia to Riazan and Perm, though generally where later objects occur, may indicate an extension of epipalæolithic settlement to the Waldai plateau and the Olonetz region (Map I). East of the Urals no epipalæolithic types even are known.

[1] *SYMA.*, XXVIII, 2 and 3.
[2] (1) p. 8.
[3] (4) pp. 150f. and 178; (5) pp. 183ff.

These late epipalæolithic cultures were the foundation on which a civilization of hunters and fishers was subsequently built at a time when the neolithic arts were fully developed in south-western Scandinavia. All the peoples to be described remained for a long time mere food-gatherers without regular burial rites. But they were peaceful and weapons of war were not manufactured.



1 2 3

FIG. 103. Baltic types of stone celt. 1, Nøstvet type; 2, Suomusjärvi type. 3. "Neolithic" type. 1-2 ($\frac{2}{3}$); 3 ($\frac{1}{2}$).

In East Sweden the evolution of the Nøstvet celt of greenstone led to the chisels like Fig. 103, 3, and bone and horn fishing implements derived from Maglemose types were sometimes translated into slate. Naturalistic carvings and

[1] (1) pp. 9ff.

phallange whistles show how the Magdelenian tradition survived late into neolithic times. These food-gatherers made pottery, but their vases both in form and decoration go back directly to Ertebolle models (Fig. 105, 2). The dead were just left under the huts.[1] The skeletons show a mixture of short and long-headed stocks.[2] But, as we have seen, the people of the East Swedish dwelling places were ultimately assimilated to the more progressive peoples of the western coast.

The culture of Pernau[3] in Latvia, characterized by bone implements linked closely to Maglemose types, associated with comb-ornamented pottery as in mature phases of the new stone age in Finland, may be contemporary with the bone and slate culture of Sweden. Further north in Sweden and in Norway ruled the Arctic culture proper. It is intimately connected with the culture of the more southerly dwelling places on the one hand, and with the opposite shores of the Baltic on the other. The relations of the Arctic culture eastward are so close that the idea of a single scattered population of hunters and fishers dispersed from Norway to the Urals seems irresistible. The following characteristic implements and ornaments are common to almost the whole area—the " Russo-Carelian " chisel,[4] (Fig. 103, 3), the concave chisel,[4] the rhomboid mace-head[4] (Fig. 104, 4), bone harpoons,[5] knives and spear-heads of slate[6] (Fig. 104, 1-3), and T-shaped pendants of the same substance[6] (Fig. 104, 6). From Norway to Central Russia the hunters carved models of men or animals in bone, slate, flint, or amber.[7] From Finland to Central Russia they made ovoid pots (Fig. 105), which at once betray their parentage in the Ertebolle pots of Denmark and their parallelism to the pottery of the East Swedish dwelling-places (Maps II and III).

At first this pottery was ornamented with simple pits, as at Ertebolle (Fig. 105, 1). Later motives executed with the

[1] *L'Anthr.* XXI, pp. 11f.
[2] *Ant. Tids. Sv.* XX.
[3] *P.Z.* V, pp. 518f.
[4] Diffused from Norway to the Urals (2), pp. 26f. and 35, cf. *P.Z.* V, p. 503.
[5] Diffused from Sweden to Central Russia (8), ii. pl. 21, Volosovo (Vladimir).
[6] Diffused from Norway to Finland, cf. (3).
[7] (1) pp. 106f., figs. 34-35.

teeth of a comb were added, and eventually supplanted the older pitted ornaments. Ailio sees in this comb-ornament the inspiration of the Danish passage grave pottery. Some vases of this later group in form and still more in design resemble the neolithic bowls of England.[1] Perhaps this is a reminiscence of some common preceramic vessel used by the Maglemose population which was spread from the Baltic to Britain.

In Finland pitted-ware is not older than the period of the Danish dolmens. The later comb ware may be as late as the

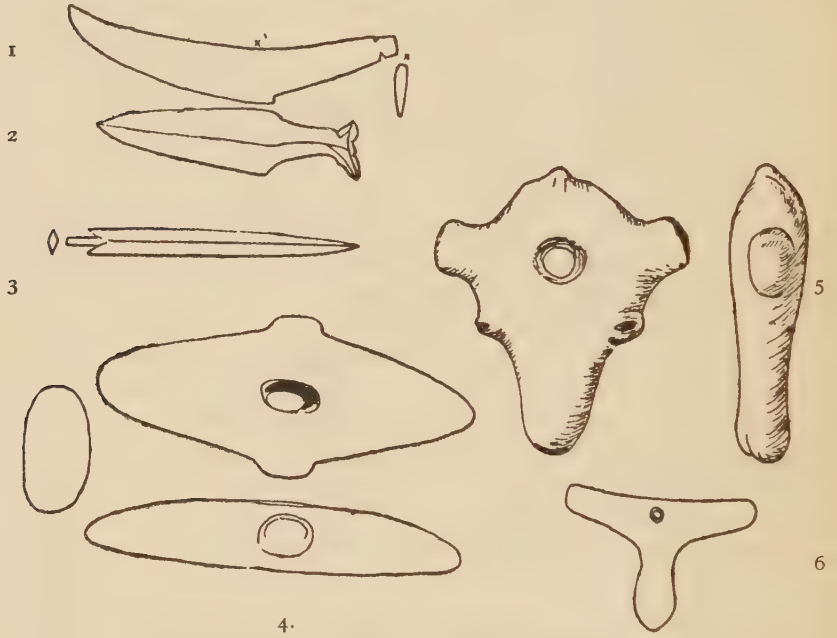


FIG. 104. Arctic types. 1-3, slate ($\frac{1}{4}$), Sweden, after Fv. 4-5, stone ($\frac{1}{4}$) and 6, slate ($\frac{1}{2}$) Finland, after Ailio.

Scandinavian stone cists since crescent-shaped flint knives like Fig. 101, 2 above, were imported into Finland during the currency of that ware.[2] As far as we can judge the further east we go, the later the culture of the fisher folk becomes. Thus the slate implements in Finland are degenerate in comparison with the Scandinavian[3] and in Central Russia analogous forms occur in copper. Thus we may suspect that

[1] cf. e.g. the maggot pattern on (1), fig. 11 from Olonetz.
[2] (5) p. 185.
[3] *Ant. Tids. Sv.*, XX, figs. 45-69.

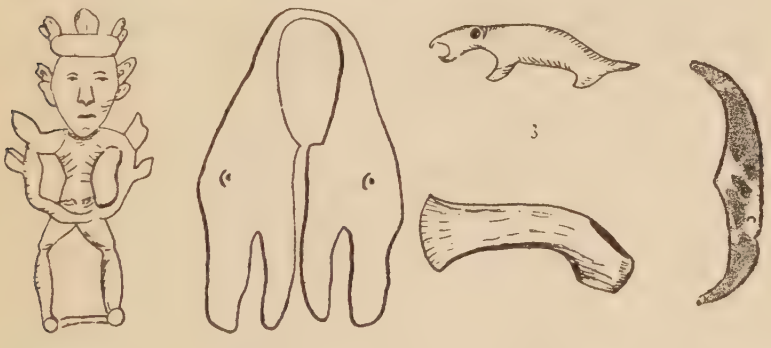
the authors of this culture themselves spread inland from the Baltic.

In Central Russia the food-gatherers came under the spell of higher cultures in the south and acquired metal weapons ;

1 2

FIG. 105. 1. Volossovo ($\frac{1}{6}$), after Ailio. 2. Åland Islands ($\frac{1}{6}$), after SMYA.

for the pottery actually associated with the remarkable depôt of Galich and subsequently collected on the site of the find, was pure comb ware such as the hunters used even in Finland.[1] The Galich hoard (Fig. 106) embraced idols, a lizard, a flat



1 2 3 4

FIG. 106. Depôt of Galich. 1-4 ($\frac{1}{3}$) ; 5 ($\frac{1}{4}$).

knife with a lizard's head for hilt, a flat spear-head of ochre-grave type, a battle-axe, a spectacle-spiral and a curious object rather like a diminutive Egyptian scolloped battle-axe, all of pure copper, and some bits of silver wire. Another " treasure "

[1] (1) pp. 53 and 83 ; Tallgren assigns these two depôts to the " Fatyanovo " culture ; cf (6) fig. 2.

more recently found by a peasant at Seima[1] presents some analogies to the foregoing. To the depôt are assigned several knife-daggers, a battle-axe of the Galich type, a single-bladed knife with wooden handle, of copper, a ring and pendant of stone and one amber bead (Fig. 107). Objects of late date, such as socketed spear-heads and socketed celts were found at the same site and none of the pottery can definitely be described as comb-ware, nor yet Fatyanovo pottery. Still it is usual to ignore the later objects and treat the Seima hoard as contemporary with that of Galich. It is linked to the latter by the axe and to the Baltic hunters by the elk's head of the copper knife-handle, which has an exact parallel in Finland.[2]

The metal can only have come from South Russia. The battle-axes are linked to the Kuban by a series of stray

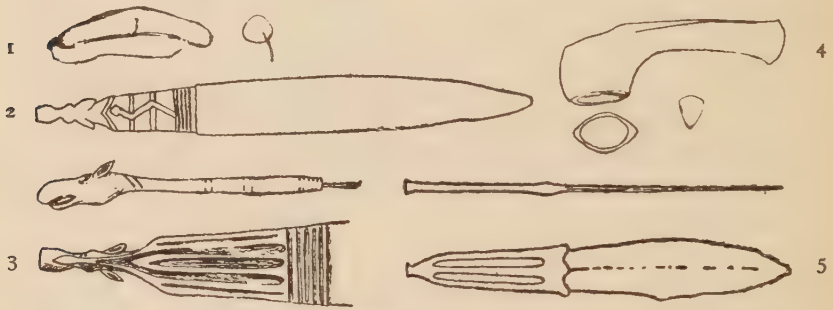


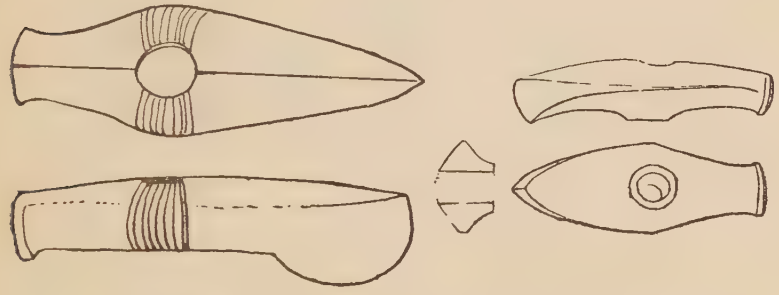
FIG. 107. Copper objects from Seima. After F.M. 1 ($\frac{1}{2}$); 2 ($\frac{1}{3}$); 3 (detail of 2) ($\frac{1}{1}$); 4 and 5 ($\frac{1}{2}$).

specimens found along the Volga (see Map III). The idols represent the Babylonian god, Shamash,[3] while the implement of Fig. 106, 5, is not really an Egyptian axe, but is identical with a Mesopotamian hunting weapon recently found at Kish and hafted quite differently from the Nilotic type. The amber bead from Seima possibly reveals the mechanism that brought all this wealth to Central Russia. Stray amber finds mark a trade route running along the Upper Volga and across the Russian lake-region to the Baltic and the amber coast of East Prussia[4] (see Map IV). So the stone ring from Seima has

[1] *F.M.* 1915, pp. 73ff.
[2] In an axe of late type; see p. 226, infra.
[3] (7) p. 27.
[4] From Vladimir, Tver, Novgorod, Olonetz, Leningrad Govts. and Latvia. (2) p. 48.

parallels on L. Ladoga and in Finland and finds its prototype in the famous depôt of Schwarzort in East Prussia. Thus the metal wealth of Central Russia may possibly result from the amber trade.

The food gatherers of the forest are thereby revealed as traders as well as mere hunters. And indeed their commercial connections must have been very wide ; for many divergent bead types are represented at Schwarzort[1]—phallic beads linked to the Ægean rather by the Donetz group than the French, ring-pendants paralleled in Poznania and Galicia as in Saxony, axe-amulets and a segmented ring which must be due to maritime trade on the Atlantic, and buttons with V perforation. Danish passage grave types are conspicuously absent.



1 2

Fig. 108. 1. Fatyanovo axe. 2. Finnish " boat-axe " ($\frac{1}{3}$).

But despite their trading activities the inhabitants of the forest region remained pure food-gatherers and stone users. But perhaps owing to their commercial wealth they were overrun by warlike peoples using battle-axes and burying their dead in separate graves. The warriors who invaded Prussia and Esthonia used axes and beakers which might be regarded as degenerate Thuringian types.[2] Those who entered Finland used boat-axes like Fig. 108, 2, and plump round-bottomed beakers ornamented with cord impressions or herring-bone pattern.[3] The Finnish axes and beakers seem exactly parallel to those of the Sösdala phases of the battle-axe culture of

[1] Klebs *Die Bernsteinschmuck der Steinzeit*, 1882, and (3) figs. 210-230 and pp. 260f.

[2] *Mannus* IX, p. 142, X, p. 13, (4) figs. 20 and 22.

[3] *F.M.*, XXIX, p. 55, figs. 7-8 ; (4) pl. VIII, 1, and fig. 16.

South Sweden[1] (Fig. 100, top, right). Some of these Finnish separate graves had disturbed settlements of the hunters who used comb-ware,[2] and are therefore later than the beginning of Montelius' period III and the bottom graves in Denmark.

In Central Russia the warriors created the Fatyanovo culture.[3] Its principal monuments are contracted burials in graves identical with the separate graves of Jutland, save that one grave showed traces of red ochre. The characteristic furniture of these tombs consists of battle-axes of semi-circular cross-section (Fig. 108, 1), thick-butted flint celts, flint spear-heads, necklaces of bored teeth and globular jars and beakers (Fig. 109). In individual cases a copper ring or disc

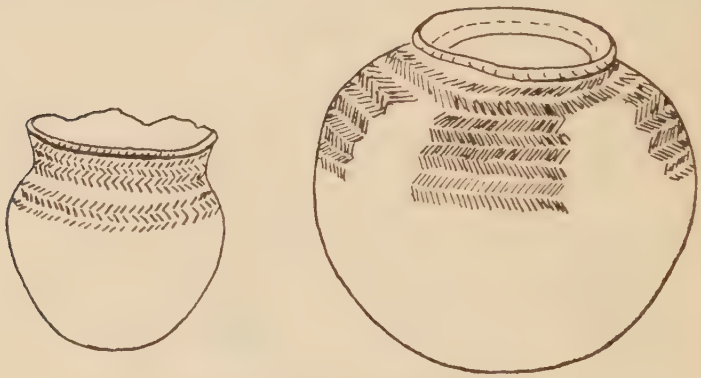


FIG. 109. Fatyanovo pottery. (⅓).

or a silver earring[4] of the ochre-grave type, enriched the grave furniture. The separate graves form regular cemeteries in Governments Kostroma, Yaroslav, Orel, Vladimir, and Nijni Novgorod (Map III), and the typical battle-axes extend westward almost to the shores of the Gulf of Reval and Poland,[5] and southward to Kiev Government[5] and the Caucasus. The decoration of the pottery finds analogies also both in the vases from the "dolmens" of Tzarevskaya on the Kuban, on the globular amphoræ of Central Germany, and on corded beakers with herring-bone decoration.

[1] *Fv.*, 1921, p. 53 and fig.
[2] *F.M.* XXIX, p. 23 (4).
[3] See (3); cf. *SMYA*, XXV, and (8) ii. pls. 26-28.
[4] *Zapiski Imp. Russ. Archeol. Obshchestva*, VII, p. 77, fig. 12.
[5] (8) pls. 40 and 48.

Whence then came the battle-axe folk? Of course it is just possible that they arose out of the local hunters and fishers if the separate graves of Denmark are to be attributed to the indigenous population. Indeed their beakers both in Finland and Central Russia are less unlike the vases of the indigenous population than were the beakers of Jutland. But in Finland the boat-axe graves have disturbed the fishers' dwellings and all the authorities agree in regarding these eastern battle-axe folk as intruders, though their original home is much disputed.

The invaders of Prussia may have come from Thuringia. Finland is generally supposed to have been overrun from Sweden, where similar boat-axes were in use, or East Prussia.[1] But it is really not easy to say whether the axes and beakers from Piirtola in Finland, or those from Sösdala in Sweden, are the older. And a copper boat-axe from south-east Russia is much more likely to have been the prototype than a copy of the Finnish-Swedish stone axes[2]; for the tubular projection round the shaft-hole is a natural feature in a metal axe. While both the Finnish and the Swedish boat-axe graves seem later than the "bottom graves" of Jutland, it is, as shown in the last chapter, not altogether easy to derive the former from the latter. The mutual relation of the Finnish and Swedish battle-axe folk is, however, a matter of secondary interest, so soon as it is clear that the former do not link Jutland to Fatyanovo one-sidedly; for the position of Fatyanovo is vital.

To-day[3] Tallgren regards the Fatyanovo culture as due to an eastward expansion of the Scandinavian battle-axe folk, and the Kuban copper age as its continuation. But no typological series leads unambiguously from Scandinavia to Central Russia instead of in the opposite direction.[4] On the other hand, the relations of Fatyanovo to the Kuban were not all one-sided; for Tallgren himself admits that in respect of the metal from the Central Russian graves "the Kuban must have been the giving party."[5] The ritual use of red ochre too

[1] *F.M.* XXIX, ii, pp. 23f.; the lower limit of boat axe graves is 21m. above sea level.

[2] (2) fig. 30.

[3] (6) pp. 18-21.

[4] Tallgren himself formerly regarded the Fatyanovo axes as typologically older than those from the "bottom graves" of Jutland, *SMYA.*, XXV, p. 81.

[5] (7) p. 22.

must have been inspired from South Russia and not *vice versa*. Moreover, the Fatyanovo pottery shows analogies to the Central German globular amphoræ which are quite distinct from the wares of the Scandinavian separate graves. But the vases from Tzarevskaya on the Kuban (Fig. 62) stand nearer to both the Central Russian group and the German amphoræ of Fig. 114, than either of these do to one another. Their mutual affinities would be intelligible if both were parallel offshoots of the Caucasian.[1]

Hence the result of a study of the separate graves of Central Russia is quite compatible with the theory suggested in Chapter X that the Fatyanovo culture was derived from the Kuban and not *vice versa*. It may be regarded as the result of an advance of the nomads of the steppes up the Volga perhaps to control the amber trade route along that river. But the Central Russian copper age thus created has no direct continuation unless it be in the fortified stations called *gorodishche* belonging to the iron age; for these occupy somewhat the same area as the Fatyanovo graves. A true bronze age is lacking.

The battle-axe rulers of Prussia were more fortunate in that they could import bronzes in exchange for their amber, when the bronze age began in the west. Their bronze weapons were all of German type imported from the Elbe region (see Map IV). Such western trade may denote a diversion of the amber traffic from the route across Russia and so explain the stagnation of the civilization of Fatyanovo.

Finally in Finland and North Russia the indigenous population of food-gatherers assimilated the warlike invaders and their pugnacious habits. One result was the creation of the beautiful stone axes with an animal's head for the butt-end so common in Finland, Olonetz, and Archangel. These are actually contemporary with the bronze age further west,[2] but no school of metallurgy arose in the forest region. It played no active part in the development of civilization in Europe. The study of these food-gatherers in the north is only relevant to the theme of this book in the negative sense of providing a contrast to the progressive civilization of South Scandinavia.

[1] cf. (1) p. 84.

[2] *F.M.*, XXIX, fig. 2, and sum., p. 2; (8) p. 155; the limit of these settlements is 7 m. above sea level.

If the descendents of the indigenous epipalæolithic population remained so long in a backward stage of culture, how can the progress further south be ascribed to the spontaneous creation of a kindred stock ?

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(1) J. Ailio, *Fragen der russischen Steinzeit, SMYA*, XXIX.
(2) J. Ailio, *Die steinzeitlichen Wohnplatzfunde in Finland.*
(3) Brøgger *Den arktiske stenalder i Norge.* (Norwegian with German resumé).
(4) Arne Europæus in *SMYA*, XXXII, 1. (Swedish).
(5) Pälsi in *SMYA*, XXVIII. (Swedish).
(6) Tallgren, *Fatyanovo : l'âge du cuivre en Russie centrale*, in *SMYA*, XXXII, 2. (French).
(7) Tallgren, *Fatjanovokulturen i Centralryssland*, in *F.M.*, 1924.
(8) Uvarov, *Archeologia Rossii, Kamennyi Period.* (Moscow, 1881) (Russian).

CHAPTER XV

The Battle-Axe Folk in Eastern Germany and Poland

Central Russia and the Baltic cannot decide the question of the relation between the battle-axe cultures of the north and of South Russia ; for that question the crucial area lies between the Vistula and the Elbe.

Here a sparse, food-gathering population may have inhabited the forests and swamps from epipalæolithic times and its survival may account for the short-headed element observed later in neolithic graves.[1] But the earliest civilized occupants of this region were Danubian peasants pushing up from the south and sending out stragglers as far north as West Prussia.[2] And then in period III the territory was overrun by the " Nordic " invaders with whom we are concerned in this chapter.

The orthodox view ascribes the invasion to an expansion of Scandinavian people parallel to that detected in North-west Germany in the passage-grave epoch. But the phenomena which should illustrate this expansion are quite different in the north-east and are not all associated together as on the North Sea coasts. The area occupied by the megalith graves is indeed extended to the middle Elbe and just across the Oder (Map III). But the evolution of the tomb-types was irregular and the dolmen degenerated directly to the megalithic cist without the intervention of the passage grave or covered gallery by simply sinking underground.[3] Apart from quite isolated passage graves[4] the intermediate stages are represented by long barrows surrounded by a wall of great stones called Huns' Beds, and east of the Oder by " Kujavish graves," like Fig. 110.[5] But the megalithic cists themselves are shown to

[1] *AfA*, IX, p. 214.
[2] *Lemke-Festschrift*, fig. 28.
[3] (4) p. 150 ; (5) pp. 97f.
[4] e.g. at Drosa (Anhalt) like that at Drouwen, *J.S.T.* IV, pp. 33ff.
[5] See L. Kozłowski, *Groby megalityczne na wschód od Odry*.

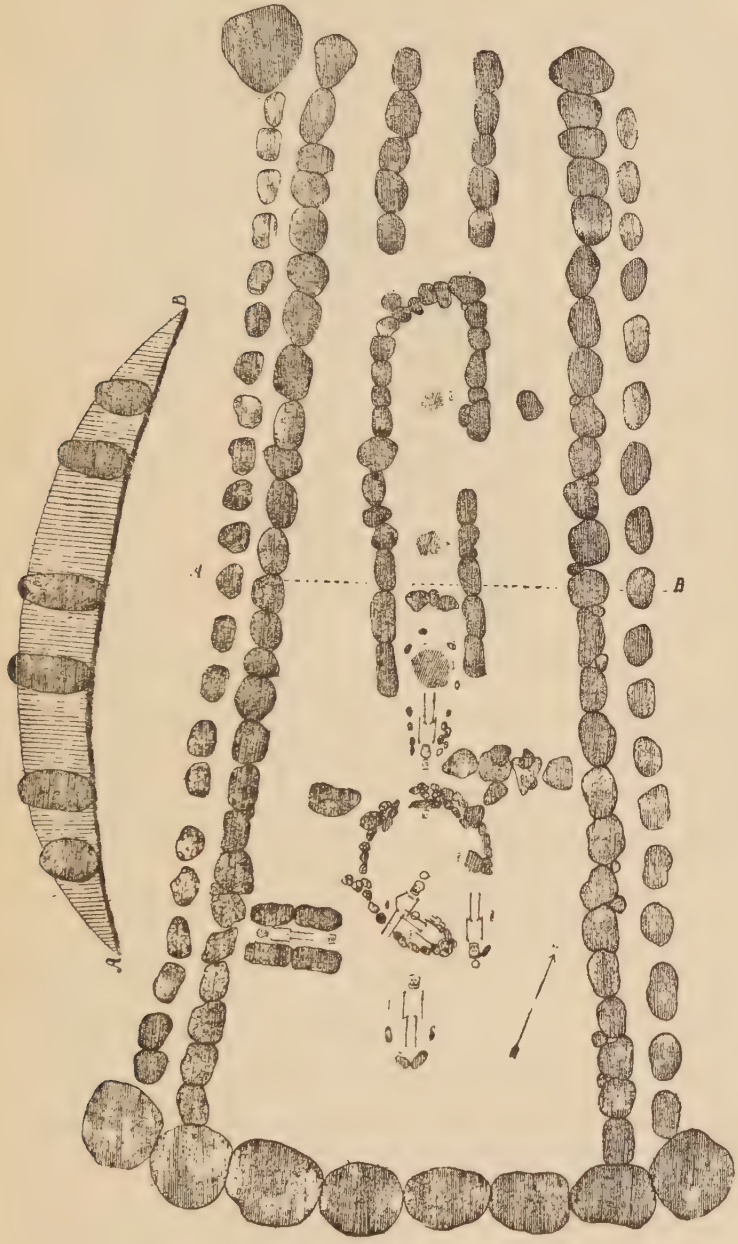


FIG. 110. "Kujavish" Grave, Swierczyn. After Kozłowski.

be contemporary with the Danish passage graves by containing amber beads like Fig. 99, 1.[1]

On the other hand the Scandinavian and North-west German thick-butted celt with rectangular cross-section is rare in the east, being usually replaced by one with a pointed-oval section (Fig. 111). The latter might be derived directly

Fig. 111. Eastern type of flint celt. Jordansmühl. After Seger (½).

from the epipalæolithic implement through an independent series parallel to the Scandinavian (Fig. 97), represented in Poland and Silesia.[2] The celts therefore do not go hand in hand with the graves to demonstrate an expansion of Scandinavian cilivization.

The Nordic Pottery of Dolmen Type

Nor is the distribution of Nordic pottery coterminous with that of the megalithic graves. The oldest group,[3] the collared flask and other dolmen types[3] (Fig. 112), only touches the megalithic region on the coast of Pomerania (Map II). The collared flasks and associated types make a wide sweep to the east along the Vistula. At Zastow near Krakow and Nalenczow near Lublin they occur in small cists with one

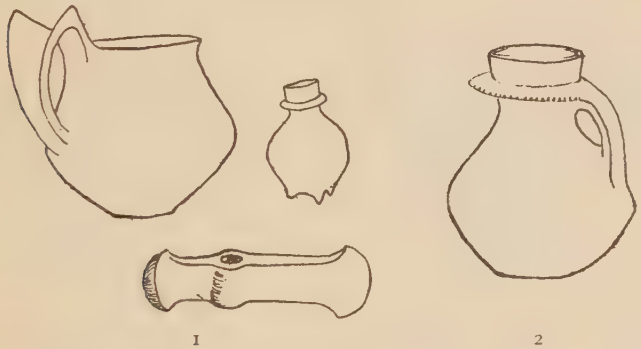
[1] In Thuringia, Kruse, *Deutsche Altertümer*, ii, pl. IV.

[2] (1) pp. 18f., but Åberg does not think that these forms constitute a real typological series.

[3] (4) pp. 143f., with maps and figures.

corpse each and at Jordansmühl in a separate grave. The polygonal battle-axes which also belong to period II in Denmark have just the same distribution in the east[1] as the collared flasks with which they occur in the graves of Nalenczow and Zastow (Fig. 112, 1). So the axes and vases belong, as in Denmark, to the same people (Map II).

Kossinna regards the diffusion of this pottery as due to the Indogermans leaving Scandinavia at the end of period II and advancing along the Vistula. In Poland he thinks the band divided, some diverging from the direct south-easterly route and spreading through Silesia to Saxony and eventually Hessen[2] and the Palatinate.[3] The late date of the Saxon and Rhenish flasks as compared with the Galician and Danish is



1 2

FIG. 112. 1 Furniture of a grave at Zastow (1/7). 2 Nalenczow (1/8).

certain and it is only the relation of the last-named groups that needs discussion. As proof of the secondary character of the eastern group it is pointed out that they are associated with thick-butted celts, and amber, and have handles at Nalenczow (Fig. 112, 2), and feet at Zastow, and occur in small cists. On the other hand the celts, owing to the possible alternative series in the east, are not conclusive ; against the Baltic amber we may set Galician banded flint ; Sophus Müller regards the loss of the handle in the Danish flasks as a degeneration phenomenon, and small cists are not all descended from dolmens. Once an east to west movement, *i.e.*, from the

[1] (1) pp. 81ff.

[2] In the long stone cist of Fritzlar.

[3] At Eeirsheimermühle, with zoned beakers, Reinerth, p. 29, fig. 9.

Oder to the Elbe, has been admitted for some of the migrants, it obviously becomes simpler to treat the whole movement as starting in the east.

In that case after the bifurcation in Poland we might assume that some went due west to Silesia and Saxony, and others proceeded in a north-westerly direction, eventually reaching Denmark. There they would be responsible for the separate graves of period II and the puzzling pottery and axes found in the dolmens. These phenomena would thus find their explanation on the Kuban; for the silver flask of Maikop (Fig. 61) could be regarded as the prototype of the collared flasks and the polygonal axe of copper from Sweden would appear as a product of Caucasian metallurgy. The idea of a south-eastern origin would thus solve certain problems, but it is only an

1 2

FIG. 113. 1, Funnel-necked beaker. 2, Vase from Ostorf. Schwerin, after Seger ($\frac{1}{6}$).

hypothesis. The contrary view put forward by German scholars cannot be lightly set aside. And it must be remembered that at Stary Zamek in Moravia the collared flasks belong to the latest settlement or Danubian III*b*.

THE GLOBULAR AMPHORÆ

Many other varieties of "Nordic" pottery are found between the Elbe and the Vistula (Figs. 113-115). Some of them would certainly seem to derive from Scandinavian passage grave wares,[1] others are peculiar to Eastern and Central Germany. But none of the "Nordic" fabrics are found

[1] e.g., those from separate graves near Schwerin *AfA*. VII, pp. 272ff, and the Walternienberg group from flat graves and collective tombs see (1) and fig. 115 below.

exclusively in megalithic tombs. They are all met just as often in flat graves or separate graves under barrows and in a few instances with cremated bones.[1] Nor are the implements found with them all of Scandinavian type. Only one group can be discussed here, that of the globular amphoræ (Kugelamphoren).

In form these vessels are not unlike the amphoræ associated in Denmark, Silesia, and Poland with collared flasks. Åberg, Kossinna, Kozłowski, and Schumann therefore derive our vases from the Danish. But the group to which I shall

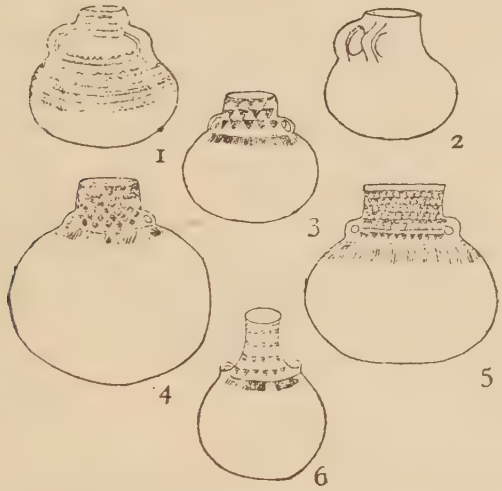


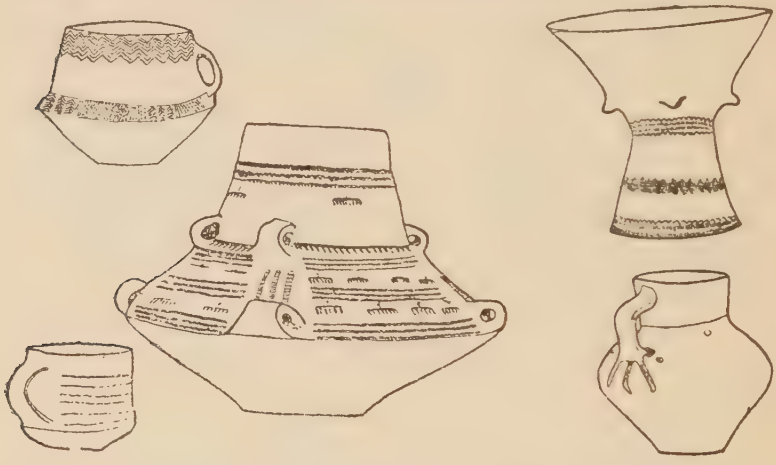
FIG. 114. 1-2, Kujavish amphoræ; 3-6, Globular amphoræ. After Stocký ($\frac{1}{8}$).

restrict the name has a quite individual decoration—bands of lozenges or triangles made up of U or V shaped stamp-impressions round the neck and fillets hanging over the shoulder (Fig. 114, 3-6). Such vases are diffused from Pomerania and the Uckermark to Bohemia and Eastern Galicia, though they are commonest in the Saal-Elbe region. The globular amphoræ are most often found in graves which may be either flat trench-graves, small cists with a single corpse, or megalithic collective tombs (the latter only in Germany and West Poland, but not to the exclusion of other types even there). They are regularly accompanied by amber

[1] (5) Flieth and Dedelow.

beads[1] and thick-butted celts, often in Central Germany made from Galician banded flint.[2] Our amphoræ therefore seem to mark a trade route and to belong, like the bell-beakers, to a race[3] of merchants rather than the colonizing migrants with whom Kossinna[4] would connect them.

Now these widely diffused amphoræ closely resemble the vases from the Kuban shown in Fig. 62, and the tombs that contained them, both at Tzarevskaya (Fig. 63, 1) and at the Baalberg,[5] on the Saal, were identical. The recurrence of the holed-stone and the same ceramic ornaments at two points so widely separated is an extraordinary instance of the diffusion



1 2

FIG. 115. 1, Walternienburg vases. 2, Latdorf "drum" and Bernburg jug ($\frac{1}{8}$).

of an idea over immense distances. But where is the starting point? The holed-stone is a regular feature of the Caucasian megaliths and might there be an original part of the heritage left by Mediterranean visitants. From the Kuban the idea might have travelled with traders to Central Europe though

[1] Copper spirals were also found with them in the Saal area, *ZfE.* XXXII, pp. 176f.

[2] *Mannus*, X, p. 204.

[3] The skulls are generally long though one at least had an index of 86.7. Some resemble the corded ware skulls, others are described as "coccoon shaped" *AfA.* XI p. 211.

[4] (4) pp. 235ff. Unfortunately Kossinna does not distinguish the several kinds of amphoræ satisfactorily.

[5] *J.S.T.*, I, pp. 25ff.; an identical cist at Oberfarnstedt (Thuringia) excavated many years ago is said to have contained corded ware and a dagger and spear-head of copper (!) now lost, *ibid.* p. 166.

the contrary hypothesis must be kept in mind. In any case Saxony is a convenient centre whence the plan of a holed-stone might have travelled on the one hand to Sweden, on the other through Hessen, Westphalia[1] and Belgium to North France. In both regions it appears in long stone cists belonging to Montelius' period IV, while the Central German globular amphoræ are generally dated to period III. So Baalberg may be yet another instance of the inspiration of the Kuban culture in the Central Europe.

Corded Ware

Among the innumerable tribal groups distinguishable in Central and Eastern Germany during period III, one seems to have ultimately become dominant. These, as in Scandinavia, were a battle-axe folk burying their dead under barrows, and

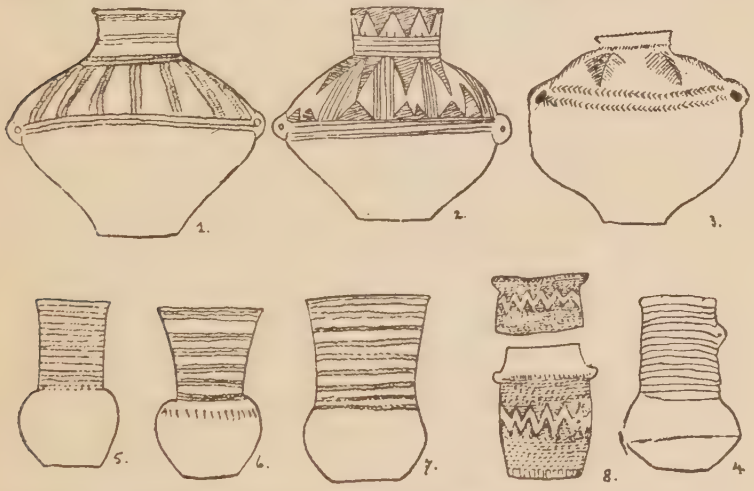


Fig. 116. Corded ware (except 4, all Thuringian); 3-4 are late types ($\frac{1}{10}$).

using cord-ornamented pottery. A principal centre of these people was in Thuringia. The graves under the barrows were either a pit in the virgin soil, as in the Danish "bottom graves,"[2] or a small stone cist, or a large megalithic chamber.[3] The walls

[1] Fritzlar and Warburg (4), p. 150.

[2] *P.Z.*, I, pp. 188f.

[3] Some authorities ignoring the Danish evidence make the series: big stone cists, small cists, and finally pit-graves, *J.S.T.*, III, p. 136, *cf.* Reinerth *Chron.* p. 37.

of the latter are sometimes decorated with curiously conventionalized paintings. Just as the pit-graves are parallel to the Danish "bottom graves," so the earliest beakers from the Thuringian barrows were ornamented with cord impressions, usually horizontal; later on, as in the Danish "ground-graves," herring-bone ornament (Fig. 116, 3) was used.[1] Thus we seem to have in Thuringia a series parallel to the Danish, so that the oldest Thuringian barrows, contemporary with the "bottom graves" of Jutland, might go back to the beginning of period III.

The people who were buried in these barrows were tall, dolichocephalic and orthognathic.[2] Isolated cases of trepanning are known. Their characteristic weapon was the facetted battle-axe (Fig. 117), supplemented by flint celts of almond-shaped section. Spheroid mace-heads as in Jutland, and

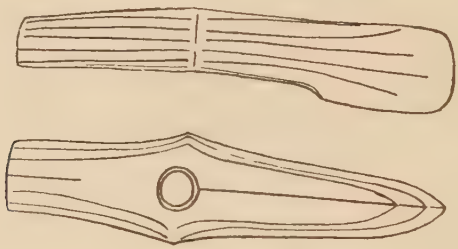


FIG. 117. Facetted battle-axe. (½).

flint arrow- or lance-heads are more rare. The usual ornaments were necklaces of bored teeth, but occasionally small copper helices, amber beads or bone ring-pendants were worn.[3] The pottery includes both beakers as in Jutland and amphoræ (Fig. 116). Oblong troughs and tripod bowls, both of clay and wood, are also known.

No settlements of these warriors have been identified in Thuringia. However facetted battle-axes have been met in Danubian villages,[4] and Schliz has suggested that the wielders had established themselves as overlords among the Danubian peasants.[5] Thus their position would be that of overlords

[1] The order is proved by the barrow with multiple interments at Peissen, now in the Museum at Halle.

[2] *AfA.* VII, p. 221 and p. 261 for brachycephals!

[3] See (3) and *P.Z.* I, l.c. and Götze in *Bastian-Festschrift.*

[4] Bärthold in *P.Z.*, V, p. 280; cf. *J.S.T.*, IV, p. 102.

[5] *ZfE.*, XXXVIII, pp. 315ff.

who did not toil themselves, like the battle-axe folk of Jutland.

Westward the corded-ware makers spread to the Rhine and ultimately reached Switzerland just as the separate graves extended from Jutland along the North Sea coasts to Holland. Further north late Thuringian beakers and amphoræ were associated with axes of Danish " ground grave " type in barrows between Hamburg and Bremen.[1] In the north-east numerous barrows along the Lower Oder[2] contained rather degenerate battle-axes, amphoræ and beakers that also look late in comparison with the Thuringian and curious ledge-handled beakers. In one case the skeleton had been coloured red.[3] In West and East Prussia[4] again corded beakers and amphoræ have been met, but they too have a late aspect. On the other hand no true corded ware is known from Poznania or Silesia,[5] though the " Nordic " pottery in this area is sometimes decorated with cord impressions.

Occasional incursions of corded-ware people into Bohemia[6] and Moravia[7] are attested by barrows and a few settlements. But on the whole the corded ware here looks late and impure—for instance, the beakers often have handles (Fig. 116, 4). The same remark applies to the pottery from barrows between Krakow and Przemysl.[8] On the other hand, purer types occur on the dunes of Little Poland[9] and again at Jackowice near Kiev (Map III).

To conclude this summary of the diffusion of corded ware we must digress to describe the cemetery of Złota near Kielce. It was not methodically excavated, but must have included a large number of small cist-graves, each containing one contracted skeleton. The skulls belonged both to long and to short-headed races, and some graves contained copper ornaments. The Złota pottery shows a curious mixture of types ; besides good Thuringian forms, hybrids in which corded motives have

1 *Mannus* I, pp. 267f., figs. 3-15.
2 (5) pls. 12 and 28, *Mannus* VII, pp. 44ff.
3 (5) p. 11.
4 *Mannus* IX, pp. 142f, ; cf. p. 223 supra.
5 S.V.n.F., VII, pp. 55ff.
6 Stocký, *Studie* ii, pp. 17f., Pic, *Starožitnosti*, i, pls. 7 and 9.
7 Červinka, figs. 66-70 and 74-75.
8 *Mat-AA.*, III, pp. 76f., figs 1-5.
9 Kozłowski, *Epoka Kamienia ; Wiad Arch.*, VII, pp. 170f., fig. 8.

been applied to funnel-necked beakers and globular amphoræ are common together with cups with crescent handles (Fig. 118). So at Złota all the several styles of " Nordic " pottery elsewhere separated are united and fused.[1] The group with crescent handles has a unique interest. At Zastow they were associated with collared flasks (Fig. 112, 1)[2]; in Moravia and Lower Austria they were connected with late corded ware; in Bohemia

Fig. 118. Złota pottery. After Kozłowski.

at Velvar one was found with a bronze collar and armband in a stone cist, and others, ornamented with cord impressions, seem to appear in a bronze age context.[3] All this may mean an east to west movement.

[1] For Złota cf. *Mat-AA.*, IX, pp. 1ff.; for the pottery Kozłowski, *Epoka Kam.* pp. 258ff., pls. XXII-XXVIII; skulls, *Swiatowit*, X, pp. 53ff.; metal, *Man.* XXIV, 64.

[2] Demetrykiewicz *Ansa Lunata*, *Wiad. Num-arch.*, IV, 2.

[3] Pic, *Starožitnosti*, fig. 26 and pl. VII; cf. pl. XLIV-XLV.

The kinship of the battle-axe culture of the Thuringian barrows with those of Jutland and South Russia is perfectly obvious; their mutual relations must be considered in the light of the distribution of corded ware just sketched. The material from barrows intermediate between Thuringia and Jutland is late in comparison with the oldest graves in both territories and the two groups appear rather as parallel creations of the same stock. To derive the Thuringian culture from Jutland, or *vice versa* is not easy. On the other hand, a Thuringian origin is highly unlikely.

The late traits observable in the corded ware east of the Elbe certainly favour Kossinna's theory of an eastward migration linking Central Germany to South Russia, as against the contrary view. But no series of type leads unambiguously one way or the other, as the Danubian pottery led from Moravia to Belgium. The ovoid beakers of the Dniepr and Donetz regions do not illustrate the further development of the "later accretions" noted in the corded ware of Bohemia, Moravia, or Galicia. Indeed, they are in some sense more primitive than the Thuringian or even the oldest Danish beakers. It follows from this that the battle-axe folk, whichever way they went, proceeded by darts which is just how nomads in contrast to agriculturalists do move. Neither theory is compatible with a continuous progress in one direction. Kossinna assumes that the first band of migrants with collared flasks, halted in Galicia, where they were overtaken by the corded ware group. The contrary view must also assume that some of the first band remained behind in Galicia. The collared flasks in Moravia could then be ascribed to a subsequent advance after later migrants with corded ware had reached Galicia, and the mugs with crescent handles would belong to this secondary wave.

To sum up, then, the German theory offers several waves and bands of invaders starting from Jutland. Some travelled across Central Russia and down the Volga, some along the Vistula to Galicia, some along the Elbe and across the Moravia to meet the second band in Galicia and proceed thence to the Black Sea coast. On the alternative hypothesis diverging currents spread from South-east Russia to Central Russia, Prussia, Denmark, Thuringia, and Hungary. Their results are parallel civilizations all betraying a common origin and all

centring round rich regions—the trading centre of the Middle Volga, the amber of Scandinavia, the salt of the Saal valley, and the gold of Transylvania. Either party can appeal to historical parallels. The Goths and the Vikings followed the tracks of Kosssinna's Indogermans, the routes of the Scyths and the Huns coincide with those of Myres' barrow-builders. The issue can only be decided when the oldest separate graves of Jutland become better known and the chronological relation of the Galician cultures to those of Scandinavia is precisely fixed.

The Beginnings of the Bronze Age

The battle-axe peoples did not introduce the regular use of metal into Germany, though, if they came from South Russia, the stray copper axes and ornaments found in Poland and Silesia, and copper hammer-axes from Bohemia and Saxony, may be attributed to them. But they did create out of the materials at their disposal a brilliant stone age culture full of resourcefulness and ingenuity and, as the vases show, not bereft of æsthetic taste. And in the end the battle-axe folk became the masters of the Nordic bronze age.

The earliest dated metal weapons in Central Germany are copper daggers of West European type found in bell-beaker graves.[1] Then came the Aunjetitz folk from Bohemia with their flat graves in Thuringia and Silesia. All this time a pure stone age culture ruled in the north-east and the later barrows with corded ware even in Central Germany are doubtless contemporary with the Early Bronze Age of the Danube.[2] But the battle-axe folk in Saxony and Lower Silesia,[3] standing perhaps in the same relation of overlordship to the Aunjetitz folk as they had to the Danubians, created the German bronze age as an independent entity.

In the Saal-Elbe region great barrows[4] were built beside the Aunjetitz flat graves (Map IV). Their wealth in gold and bronze illustrates the power of the chiefs who dominated the Elbe trade route and the salt deposits of the Saal. The form of the graves, the occasional use of earlier barrows for bronze

[1] *J.S.T.*, I, pl. XVII, 56-7.

[2] e.g. a late corded ware interment in the bronze age barrow of Helmsdorf, *J.S.T.*, VI, p. 45.

[3] e.g. the barrow of Schemmelwitz *S.V.* VII, p. 348.

[4] e.g. Leubingen *J.S.T.*, V, pp. 1-59; Helmsdorf, *ib.* VI, pp. 1ff.

age interments, and the survival of stone battle-axes in some tombs demonstrates their continuity with the older neolithic population. The furniture of the barrows, pins and earrings of Aunjetitz type, Italian daggers, halberds derived from Irish

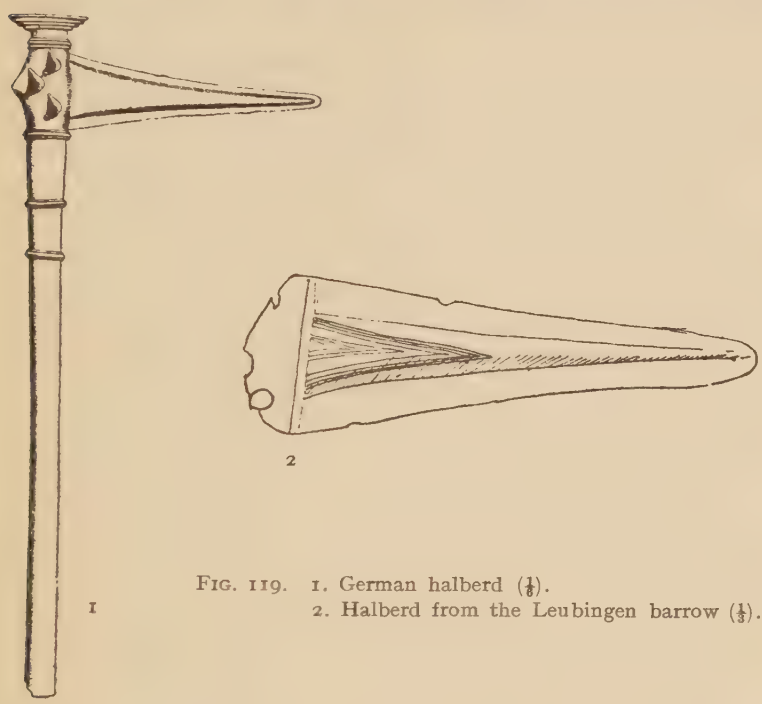


FIG. 119. 1. German halberd ($\frac{1}{6}$).
2. Halberd from the Leubingen barrow ($\frac{1}{3}$).

types [1](Fig. 119, 2), and celts imported from England,[2] reveals the divergent impulses which inspired the German bronze age and at the same time serves to date the barrows round about 1600 B.C.

In the hands of the battle-axe people the several foreign contributions were welded into an original and harmonious whole. The Irish halberd was provided with a shaft of bronze (Fig. 119, 1), the Italian dagger was elaborated in a fresh way, and a local type of flanged celt was created. Thus an independent bronze industry was founded in Central Germany. The products of this industry were distributed

[1] Leubingen; for the Irish origin of the Central German halberds see Åberg, *Iberic*, p. 170.
[2] Helmsdorf, l.c. p. 55.

widely along the great trade routes, to the amber coasts of Prussia and even to Lithuania, to Sweden, and to Holstein.[1] The peculiar German halberd with bronze shaft reached even Bavaria, the Rhone Valley and northern Hungary (Map IV). The independent school of metal work in Holstein and Mecklenburg was created in the sixteenth century by a kindred people following Central German models and thence as we have seen spread the bronze age to Scandinavia. But to the east and off the great arteries of trade, the Elbe and the Oder, the bronze age was poor and late.[2]

The rise of northern Europe to an independent place in the civilization of the continent has been sketched in the last three chapters. We began with an epipalæolithic population living by hunting and fishing. The sort of culture of which such people were capable by themselves, was revealed in North Scandinavia and the forest region beyond the Baltic. It was just a continuation of the palæolithic mode of life into the neolithic and bronze ages. But in Germany and Scandinavia a virile stone age led on to an epoch of original metallurgy. The foundation of this progressive civilization has been ascribed to new elements derived from the west and from the east represented by the megalith-builders and the battle-axe folk respectively; for the rapidity of its growth and the brilliance of its achievement contrast both with the backwardness of the forest folk and the petrifaction which we shall see overtook the megalithic culture in the area of its purest manifestation. In the subsequent development of Nordic civilization southern influences transmitted through the Danubian province and through Britain stimulated progress. The result could not in the sixteenth century any more than in the sixth rival the contemporary civilization of the Ægean. But it was no mean achievement for a region so remote from the oldest centres of urban life. We shall not mend matters by reversing the rôles of the two areas in early times; for that will involve the denial of all progress in the north for a thousand years and the desperate hypothesis of a depopulation of large tracts.[3]

[1] See Montelius, *AfA*, 1899.

[2] For Silesia cf. *S.V.*, VI, pp. 306ff., VII, pp. 345f.; for Poland *Album prähist. Denkmäler des Grosshertzogtums Posen*, i, pl. IX; ii, pl. XXI, etc.

[3] Kossinna, *Die Herkunft der Germanen*, p. 27.

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(3) Götze, Höffer, and Zschiesche, *Die vorgeschichtlichen Altertümer Thüringens,* 1909.

(4) Kossinna, *Verbreitung der Trichterbechern, Kragenflaschen und Kugelamphoren : Mannus,* XIII.

(5) Schumann, *Die Steinzeitgräber der Uckermark.* See also the bibliography to Chap. XII.

CHAPTER XVI

Lake Dwellings and Alpine Civilization

The Origin of Pile-Dwellings

Epipalæolithic habitation of the Alpine slopes is attested by the deposits in the caves of Birseck near Basel and Offnet in Bavaria, and the latter shows that the short-headed Alpines go back to Azilian times. The furniture of the famous lake-dwellings which represent the neolithic civilization of the Alpine zone exhibits many traits which might have been inherited from the Maglemose and Azilian cultures. Picks, celt-hafts, harpoons, and fish-spears of horn, phallange whistles[1] and wooden boomerangs,[2] have parallels at Maglemose and Brabrant. Vouga has recently found painted pebbles, like those from Mas d'Azil, in the oldest settlements on L. Neuchâtel. And the form of the habitations may itself be derived from the epipalæolithic raft. The neolithic villages in Switzerland consisted usually of dwellings raised on piles above the shore of the lake. But more primitive structures, platforms or *Packwerkbauten*, were also used, especially in North Switzerland and Bavaria, as the foundations for the houses. These seem to have begun in a simple raft-float on the edge of the lake moored by posts at the sides. As the substructure became waterlogged, another layer of logs would be laid upon it and then another as occasion arose, until a regular platform resting upon the lake-bottom was created.[3] In this way a pile-structure might have been evolved from the primitive raft.

Now lake-dwellings are not confined to the Alpine zone; outside it neolithic pile-dwellings occur in West Prussia, Sweden, Schleswig-Holstein, Mecklenburg, Holland and Yorkshire

[1] (1) Figs. 28, no. 19; 30, nos. 3 and 5; 94, no. 3; cf. *Arch. J.* LXV, p. 233.

[2] (6) p. 14.

[3] (1) p. 99; *B.J.*, 127, pp. 118f.

(Holderness).[1] That is, their distribution corresponds roughly with that of Maglemose remains. Now the Maglemosians, their descendents at Brabrant, and their relatives at Holderness used a sort of raft as at least a temporary dwelling place[2]; for such a structure brought them nearer to their prey and afforded space and a dry foot-hold in a densely wooded and marshy world. There is thus no need to look outside Europe for the origin of pile-dwelling.

But, apart from "palæolithic" survivals common to all, the civilization revealed by the contents of the lake-dwellings varies from district to district. So there is no such thing as lacustrine civilization in general. The differentiæ consist

FIG. 120. a, b ($\frac{1}{3}$), and c ($\frac{2}{5}$), Lake Neuchâtel. After Vouga. d ($\frac{2}{5}$).

precisely in those elements which make the several lacustrine cultures "neolithic." All the facts become intelligible with the assumption that the epipalæolithic population spread widely over northern Europe who took refuge on platform dwellings from sheer necessity, borrowed elements of neolithic civilization from more progressive neighbours. We have already seen exactly how the lake-dwellers of Alsen and Alvastra acquired the neolithic arts from the megalith-builders. It remains here to enquire how the epipalæolithic Alpines acquired their neolithic culture which is utterly different from the Scandinavian.

[1] Later lake-dwellings have been omitted, but the neolithic date of that in Holderness is very doubtful; see below, p. 286; cf. *B.R.G.K.*, VIII, pp. 32f.

[2] *Proc. P.E.A.*, IV, p. 62; cf. pp. 8 and 212 above.

The Origin of Alpine Civilization

Our knowledge of lacustrine civilization in Switzerland and Wurtemburg has been revolutionized by the stratigraphical observations of Dr. Paul Vouga on L. Neuchâtel, and of Dr. Hans Reinerth and Prof. R. R. Schmidt on the Federsee moor. Their results entirely supersede, especially in respect of chronology, the old conclusions based on a study of material dredged up haphazard from the lake bottoms. At several stations on the shores of L. Neuchâtel Vouga has distinguished four superimposed settlements which he calls respectively the lower, middle and upper neolithic and the chalcolithic levels.

The neolithic civilization appeared quite fully formed in the lowest level.[1] The first settlers already possessed the domestic animals,[2] practized agriculture, and clothed themselves in woven fabrics though they did not use clay "spindle-whorls" (which were really beads). They hunted the local game, including the aurochs and the elk, but they were not addicted to a fish diet. Every possible variety of polished stone celt was already in use and the axes were hafted by means of the horn sleeves of Fig. 122 A-B. Perforated stone axes were not used. For their celts the lower neolithic villagers sought out by preference greenstones such as jadeite and nephrite, and they imported translucent flint for the manufacture of simple blades with unilateral retouching. Round bone points (Fig. 120 *b*), sharpened at either end, were used as arrow-heads. Contrary to the *a priori* theories the oldest pottery of Western Switzerland was the best. It was grey-black in colour, very thin and well smoothed (Fig. 120, *c*).

The first lake-dwellers used to paint themselves with red ochre like the Azilians, and wore as ornaments boars' tusks perforated at either end, and bone pendants sometimes engraved (Fig. 120, *a*). A sinister side of the picture is revealed by amulets made by trepanning the human skull and by the fact that the human bones found at the lowest level had been broken to extract the marrow. So our lake dwellers may have been cannibals![1]

[1] Esp. (6), cf. also (7).

[2] In order of frequency: short-horned cattle (*Bos brachyceros*), dogs, swine (*Sus palustris*), goats, the turbary sheep (*Ovis aries pal.*), but no horses *AsAg.* IV, p. 252.

The lower neolithic pottery is the key to the source of the neolithic elements, of which it is not the least, in Alpine culture. Its technique is quite Danubian and the same fine fabric is met all through north-east Switzerland, on the Lake of Constance, and on the Federsee. There the pottery and celts from the long two-chambered wooden houses at Aichbühl are, according to Reinerth,[1] identical with those from the lower neolithic levels of L. Neuchâtel. But the Aichbühl pottery has the most unmistakable affinities with the Bavarian variant of Danubian II ware, Reinecke's Munchhof type.[2] Moreover, shoe-last celts are not uncommon in the pile dwellings of the Lake of Constance.[3] Now we know that the Danubians possessed the same domestic animals as the lake-dwellers,

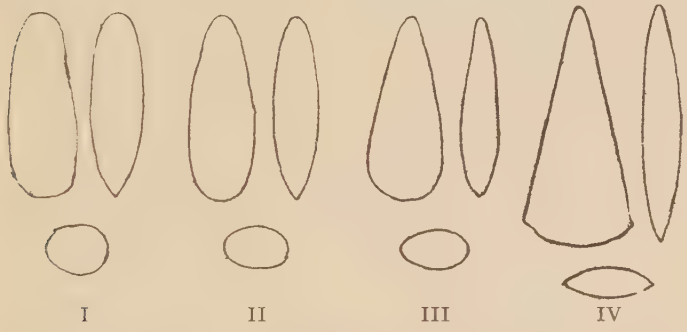

FIG. 121. Evolution of "Western" celts in four periods according to Reinerth ($\frac{1}{4}$).

and that their colonies had reached right into the Alpine zone in period II (Map II). Surely these were the Alpines' masters in the neolithic arts.

However, Dr. Reinerth, with a pathetic faith in the culture of France, believes he can recognize a West European element, living mainly by hunting and fishing, coming up the Rhone valley,[4] and represented *inter alia* by the celts of Fig. 121. To the westerners he attributes the oldest settlements on the Lake of Constance and two very primitive lean-to huts at Dullenried on the Federsee moor. I may add that the bone

[1] (4) p. 61 ; cf. Vouga's criticism. *W.P.Z.*, XI, pp. 20f.
[2] (4) pl. XI, 4, 16, 20 and fig. 12 (1) are pure Danubian II forms. Dr. Reinecke has kindly confirmed this view.
[3] *P.Z.*, VI, p. 30.
[4] (4) p. 75 ; cf. Vouga, l.c., p. 22, for an apt criticism.

points, the cranian amulets, and the boars'-tusk pendants from L. Neuchâtel have numerous parallels in South France.

But, as we shall see, the higher elements in the lower neolithic civilization, particularly the fine grey pottery, have no prototypes to the west. The culture of Dullenried and its coarse pottery is much more like that of the middle neolithic at L. Neuchâtel than that of the lower. So Reinerth's westerners, whoever they were, cannot have been the authors of the neolithic culture even in Western Switzerland.

It remains to consider the south. The Chamblandes culture of Western Switzerland,[1] represented by small cist-graves containing contracted skeletons, is undoubtedly due to intruders from Upper Italy. The grave form goes back to the early burials at Grimaldi and similar cist-graves extend all across the north of the Apennine peninsula.[2] Their authors pushed up the Aosta valley,[3] across the Great St. Bernard to the Rhone, where they left large cemeteries on the shore of the Lake of Geneva, and spread ultimately to Birseck near Basel, where such a cist overlay the Azilian deposit (Map I).

The furniture of these graves is extremely poor. In Switzerland they contained Mediterranean shells, unpolished flint celts and a lance described as "Acheulean," boars' tusks perforated as on L. Neuchâtel, and bits of red ochre. But these graves cannot belong to the founders of the Alpine culture; for the lake-dwellers were predominantly short-headed[4] while the skulls from the Chamblandes graves belong to long-headed stocks, chiefly "Cro-Magnons" (Mediterraneans?) with some "negroids."

Nor are the Chamblandes graves certainly as old as the lower neolithic epoch. The flints, which look quite epipalæolithic, can all be paralleled in neolithic strata in Italy,[5] while an occasional wedge-shaped hammer-axe and a button with V perforation[6] cannot be older than the middle neolithic age of Switzerland. The Chamblandes culture is therefore just an episode whose relation to the Swiss stone age

[1] For details cf. Tschumi, *Die steinzeitliche Hockergräber*, in *AsA.*, XXII-XXIII, with maps and figures.

[2] e.g., near Trient, *JfA.*, VI, p. 60 (?copper age).

[3] *B.P.*, XLIII, p. 110.

[4] Last in *AsAg.*, IV, pp. 131f.; cf. *AfA.*, VII, p. 254.

[5] e.g., the lance in *M.A.*, XXVI, p. 40, fig. 10.

[6] The button was found in an undisturbed grave with a chipped celt at Glis; the axe may be intrusive; for some graves were "re-used."

can only be summed up in the negative judgment that it was not the foundation thereof.

We are then left by a process of exhaustion with the Danubians. I assume that the epipalæolithic inhabitants of the Alpine zone, perhaps descendents of the Offnet race, acquired from the Danubian peasants in Bavaria some head

FIG. 122. Evolution of the horn celt-hafts. A-B Lower, C Middle, D Upper, Neolithic. Lake Neuchâtel. After Vouga ($\frac{2}{5}$).

of domestic stock, some seeds of grain and flax, and learned the technique of pottery though they did not altogether imitate the Danubian pots, but translated into the new medium their own leather vessels. From Bavaria[1] the Alpines carried their newly acquired culture into Western Switzerland, to the eastern slopes and along the Rhine, and three related cultures grew up out of the common ground (Map III).

THE DEVELOPMENTS ON THE WESTERN LAKES

The settlers who founded the lower neolithic settlements on L. Neuchâtel were driven from their villages at the end of the epoch by a flood. After the elapse of some time the old sites were reoccupied and one new station was founded. But civilization had deteriorated. In the middle neolithic levels the proportion of the bones of game to those of the domestic animals had markedly increased,[2] the new pottery is coarse

[1] I do not need to claim that Aichbühl I was really the first and earliest manifestation of the new culture ; for perforated axes were found there.

[2] *AsAg.*, IV, p. 263.

and ornamented like that of the North Mediterranean coast with plastic strips; the old transparent flint was replaced by opaque local varieties. On the other hand, the middle neolithic villagers made or imported wedge-shaped perforated axes and had learnt to improve the horn hafts by trimming (Fig. 122, *c*). Perhaps the lake-dwellers had taken refuge from the flood upon the mountain slopes and there become mixed with more primitive tribes—Reinerth's " west-folk "—dwelling in caves.[1] The pigmy skeleton[2] from the lake-dwelling of Egolzwil may belong to some of these backward survivals. No graves whatever have been found belonging to the lake-dwellers at this or any other period.

Henceforth Western Switzerland is a cultural backwater. The material from the lake-dwellings is valuable because the

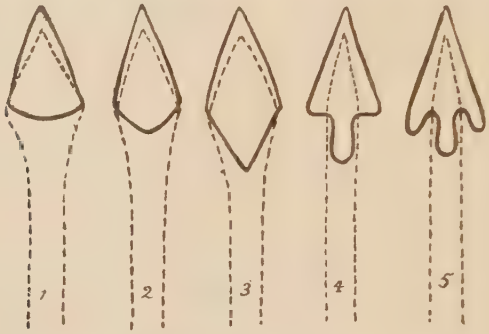

FIG. 123. Theoretical evolution of the flint arrow head, after Ischer ($\frac{1}{2}$).

mud has preserved an unique record of the neolithic arts and crafts, but of arts borrowed from others rather than a peculiar or original creation. No internal progress can be discerned on the Western Lakes. So the upper neolithic people on Lake Neuchâtel acquired simple battle-axes with round butts but no distinct heads. These weapons, however, were introduced by Nordics. They occur in barrows with cremated bones containing very decadent corded ware and copper spirals at Schäfflisdorf (C. Zurich).[3] Later on the lake-dwellers imported a few metal objects, but the use of copper and bronze like that

[1] (1) p. 136.
[2] Schenk, *La Suisse préhistorique*, p. 448.
[3] Material at Zurich; for vases cf. (3) fig. 21. Ischer assigns the barrows to his chalcolithic period.

of iron[1] began late in the Alpine valleys. The chalcolithic stations themselves contain occasional flanged celts[2] and bone copies of metal pins of mature Early Bronze Age type (Fig. 124, *d*). Such objects show that the "chalcolithic" period in Switzerland was really contemporary with the fully developed Early Bronze Age of Italy and Central Europe.

The inhabitants of Western Switzerland had no metal of their own, and no commodity acceptable to metal-using peoples to offer in exchange. They were, however, able to import from the even less civilized inhabitants of France the flint of Grand Pressigny. The first imports of this substance are found in the chalcolithic levels on L. Neuchâtel.[3] Besides the stray

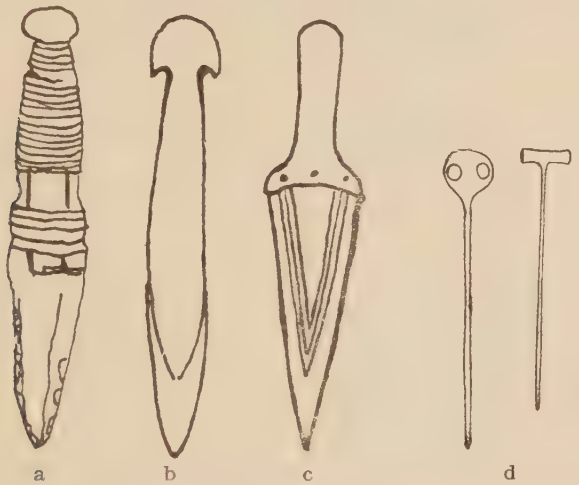

FIG. 124. a-c Theoretical typology of the dagger according to Ischer: a flint and wood (actual specimen); b, copper and wood (reconstructed from blade and handle); c, bronze ($\frac{2}{5}$). d, Bone pins ($\frac{1}{2}$).

bronzes found in chalcolithic stations, a few Early Bronze Age graves are known from the Gruyère and the Rhone and Rhine valleys.[4] But they do not belong to the lake-dwellers, but to traders travelling from the Adriatic to the Rhine and Britain. The foreign copper and bronze objects from the chalcolithic stations are the result of similar through trade.[5] It follows

[1] Viollier in *Opuscula archæol. O. Montelio dicata*, pp. 126f.
[2] *AsAg.*, IV, pp. 2ff.; (3) p. 25.
[3] (7) p. 280; jadeite and nephrite were less common at this level.
[4] Viollier, *op. cit.*
[5] Important are a "symbolic" copper axe from Luscherz, L. Bienne, and a stray Cypriote dagger in Canton Zurich (3), fig. 22.

that Ischer's typological series illustrating the evolution of the dagger is a delusion—it has no stratigraphical foundation—and that the flint dagger (Fig. 124) *a*, is really a copy of the copper type *b*, or the bronze dagger *c*.

The Alpine bronze age itself only began later. The true bronze age stations contain few Middle Bronze Age types, such as winged celts; the mass of their contents belongs to the Late Bronze Age of Italy or Central Europe.[1] Since, then, the preconditions of the lower neolithic culture did not exist in Bavaria till Danubian II and late in that period, while the chalcolithic period overlaps with the bronze age, period IV on the Danube, the earliest settlements on L. Neuchâtel belong to the end of the third millennium and the latest "neolithic" (chalcolithic) levels there may be as late as 1500 B.C.

The Civilization of the East Alpine Slopes

While the colonists of Western Switzerland stagnated in a backwater, their relatives to the east, living nearer to the progressive civilization of the Danube valley and occupying a territory rich in metal ore and traversed by important trade routes, played a more prominent part in cultural progress. The Alpine cultures, parallel to those just described and based on the same foundation, are represented not only by lake-dwellings, but also by fortified hill stations. South-east of the Schwarzwald we find in period III land stations of the Altheim type in Upper Bavaria[2] and Upper Austria,[3] extending perhaps into Lower Austria,[4] and lake-dwellings on the Mondsee and Attersee.

The inhabitants of the East Alpine slopes were a warlike race and the moat at Altheim is full of memorials of a fierce conflict. Besides the usual implements of stone, flint, and horn, they made mace-heads and polygonal battle-axes of stone. Moreover, they used flat celts, riveted daggers, and other implements such as fish-hooks and awls of copper, and wore spectacle spirals of the same metal. Most of the pottery was of the coarse gritty fabric met in the middle neolithic and

[1] *AsAg.*, IV, pp. 2f.
[2] *R.G.K.-Bl.*, VIII, p. 10; *Beiträge zur Anthrop. Bayerns*, IX, p. 308.
[3] *AfA.*, XII, p. 308; *W.P.Z.*, V. p. 19.
[4] *W.P.Z.*, IX, p. 29.

later periods further west. The ornament consisted in plastic strips and finger-tip impressions, but in the Upper Austrian lakes spiral and sun-figure motives were executed by deep furrows (Fig. 125) and may be reminiscences of Danubian decoration. In Lower Austria the use of the crescent handle may indicate contact with a current coming from Poland.

The foreign influences that differentiated the East Alpine culture from that of the West were partly commercial, partly

FIG. 125. Mondsee Pottery ($\frac{1}{3}$).

perhaps ethnic. The trade route connecting the Cypriote dagger found in Canton Zurich with the Lower Austrian-Hungarian series must have traversed the region (Map IV). The well-known parallels between the sun-figures of the Mondsee pottery and motives on bronze age vases from Cyprus may be due to this traffic. On the other hand the influence of the bell-beaker folk, though they crossed the Brenner, is not perceptible.

But the battle-axes must be Nordic. The polygonal type (Figs. 84, *b*, and 112, 1), rare in Central and quite unknown

in North-west Germany (Map II), must be derived through Bohemia and Moravia from the battle-axe cultures of Silesia and Galicia, where moreover spectacle spirals of copper were used as ornaments. They may be the relics of an invasion by Nordic warriors who were perhaps accepted as overlords by the Alpine folk. The discovery of a battle-axe folk living in fortified stations north-east of the Alps will enable us to understand the intrusion of similar battle-axes into North Italy in the copper age to be described in the next chapter.

The chronology of the East Alpine copper age is not yet satisfactorily elucidated. Superficially it looks parallel to the chalcolithic period further west. But Upper Austria is rich in copper ore and it is not unlikely that the inspiration of Ægean trade and the battle-axe folk who had used copper in Silesia should have led to an early exploitation of this wealth. On the other hand a copper celt from the Mondsee contained no nickel, an impurity present in large quantities in the ore from the prehistoric mine on the Mitterberg, near Salzburg[1]; Altheim pottery was found in the huts, but not in the bronze age graves, of Straubing,[2] and a pin from the Mondsee showed an alloy of tin.[3] But while a partial overlapping with period IV in the Danube must be admitted, we may provisionally accept the verdict of Dr. Reinecke and regard the Mondsee-Altheim culture as a whole as older than the Aunjetitz-Straubing period in the Danube valley.

Thus on the eastern slopes under North Ægean-Hungarian inspiration and Nordic leadership an independent copper age civilization arose upon an Alpine-Danubian foundation during period III—i.e., round about 2000 B.C. Its continuation was the Early Bronze Age of Upper Bavaria represented at Schussenried and elsewhere.

The "neolithic" lake-dwelling of Notranje gorice on Laibach Moor (Ljubljano)[4] belongs also to the East Alpine folk, but not specifically to the authors of the Mondsee-Altheim culture. Polygonal battle-axes were missing, though simple wedge-shaped perforated axes of Danubian II type and saws (? sickle-teeth) and tanged arrow-heads of flint were in use.

[1] Kyrle in *M.A.G.W.*, LII, p. 196; cf. *JfA.*, VI, p. 90.
[2] *R.G.K.-Bl.*, VIII, p. 10.
[3] M. Much, *Die Kupferzeit*. The dagger from Langensteinerwand on the Enns is also described as "bronze" *W.P.Z.*, V, p. 26.
[4] *JfA.*, IV, pp. 92ff.

The pottery was of the usual East Alpine coarse fabric ornamented with relief strips, but a shallow beaker with horizontal cord impressions round the neck shows Thuringian influence. Clay "spindle-whorls" and wooden beads were common. Despite the neolithic inventory of celts, flints, horn picks, and bone prickers, some whet-stones belie the high antiquity of the station. A skull found in it was attributed by Schliz to the lake-dweller type, though von Luschan regarded it as "negroid."[1] The neighbouring station of Brünndorf belonging to the Middle Bronze Age[2] may be the continuation of the former. The metal types are partly due to Italian influence, but a mould for casting an Hungarian axe like Fig. 87, 5, and some figurines point to the Middle Danube, while the decoration of the pottery might be a development of the Mondsee style. The spread of lacustrine civilization to Bosnia belongs to the Late Bronze Age[3] and cannot be discussed here.

The Civilization of the Northern Highlands

The Alpine colonists going north-west and mostly separated from the last group by the Schwarzwald, produced the Michelsburg culture again represented by fortified land stations and again showing early evidence of Nordic influence, this time from the Thuringian corded-ware people, which Reinerth thinks he can trace already at Aichbühl.

The Michelsburg culture is no more than the others already described to be regarded as a direct descendent of that of Aichbühl. Schumacher[4] has pointed out how the Michelsburg land settlements in the Rhine valley are correlated with the remains of pile-dwellings in the river bed. These and the platform settlement on the moor at Weiher, near Schaffhausen, which also contained Michelsburg types, may have been the forerunners of the land settlements.

The Michelsburg people dwelt on fortified hills. Within the protecting trench and palisade the houses were arranged along regular streets. The huts themselves were generally rectangular, sometimes sunk in the earth, sometimes built on a wooden floor on the ground level. The occupant on his death was buried squatting in a pit under his dwelling, which was then destroyed. The skulls, the lake-dwelling type of Schliz,

[1] *R.E.A.*, 1919, p. 28.
[2] (2) figs. 45f.
[3] *W.M.B.H.*, XII, p. 6.
[4] (5) p. 29.

are often long, but betray clearly an admixture with Alpine round heads.[1]

Bone and horn were freely used as in Switzerland, and often show primitive types. The celts are chiefly small and

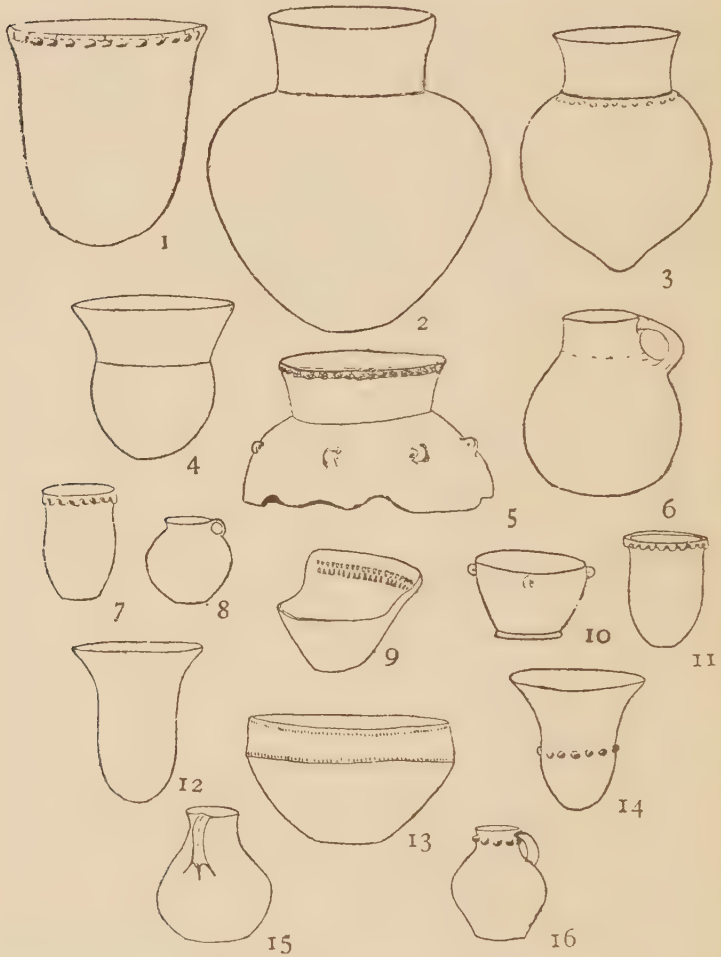

FIG. 126. Michelsburg pottery.

degenerate. The pottery (Fig. 126) is very fine, black or grey in colour and often well polished. The tulip beakers have however, often been compared to the epipalæolithic Ertebolle

[1] *AfA.*, VII, p. 255.

pots of Denmark[1] (they might just as pertinently be compared to the silver beaker from Troy or the clay beakers of the Badarians of the Fayum). The similarity, however, merely indicates the tenacity with which the common leather prototype was conserved. Another very characteristic ceramic product of the Michelsburg folk was the flat clay disc used for baking bread.

The Michelsburg people possessed the same domestic animals and cultivated the same plants as the lake-dwellers. But despite their agriculture and their regular villages, they must have retained nomadic habits. Eastward they wandered along the Eger into Bohemia,[2] where tulip beakers and other typical vases witness to their incursions. Westward the fine pottery of the Camp de Chassey,[3] with its evident Alpine affinities seems much more likely to be derived from Michelsburg than *vice versa*; for no explanation of this technique is available in the west. To the north as far as the Uckermark[4] we find jars with vague Michelsburg affinities, but perhaps they are parallel products of the same stock spread all over Germany in epipalæolithic times.

The centre of the Michelsburg civilization was, however, on the Rhine and the lower courses of the Main and Neckar. Here its authors displaced the Danubians during period III, for on the Goldburg the wooden houses of the Alpines are superimposed on older pit-dwellings containing pottery of the Rössen style.[5] In South-west Germany the Michelsburg people came under the sway of the battle-axe folk from Thuringia who may have stood in the same relation of overlordship to them as to the Danubians in Central Germany. A barrow belonging to the Thuringians is adjacent to the village of Aichbühl, and corded ware has been found in Michelsburg settlements.[6] On the other hand Michelsburg vases were included in the furniture of barrows in the Neckar valley.[7] Some time after their arrival in the Rhineland the Thuringians began to cremate their dead.

[1] So Reinecke in *M.Z.*, 1908, but in the light of the Danubian II. affinities of Aichbühl pottery he is now inclined to modify his former view of the high antiquity of Michelsburg culture.

[2] Schliz in *Opusc. arch. O. Montelio dicata*, p. 34; cf. p. 185 above.

[3] Dechelette, I, fig. 202; the horn cups and ornaments of fig. 197 have parallels in the Swiss lakes.

[4] At Flieth and Dedelow, cf. Schumann, *Uckermark*.

[5] (4) pp. 59f.

[6] e.g. the amphora, *F.B. Schw.*, XVII, p. 7.

[7] *ZfE.*, XXXVIII, pp. 317 and 343 and fig. 3.

Later on the bell-beaker folk settled in the Rhineland while the Michelsburg settlements were still inhabited. These prospectors introduced the use of metal and perhaps the huge celts with pointed butts often made of jadeite. The latter are met in depôts sometimes with flat celts of copper, and in Michelsburg stations.[1] Reinerth treats them as the last development of his Western series of celt-types (Fig. 121, IV), but Schuchhardt believes they were hafted for use as halberds.[2] The form of these implements curiously resembles the flint celts of Montelius' (hypothetical) period I of the Scandinavian stone age! The type recurs in bronze age barrows in Savoy and in Brittany, sometimes in jadeite.[3] They are not, however, associated with bell-beakers in the latter regions, and though some connection between the Rhineland and the West must have taken place, Schumacher's derivation of the Rhenish beaker-folk from that quarter (scil. Armorica) lacks all direct evidence.

In the Rhineland a fusion between the bell-beaker and corded ware cultures produced the zoned beaker group. The latter spread down the Rhine to Holland and were introduced into England by invaders who initiated the bronze age there. The mixture of the original Alpines with the Thuringians and the bell-beaker folk formed the basis of the bronze-using population of the Rhineland. They continued to live in fortified stations. The dead were buried sometimes in the settlements as on the Adlerburg near Worms,[4] sometimes in flat graves, sometimes under barrows, but now in the extended position. The pottery was a hybrid product, but the finely decorated zoned beakers soon went out of fashion, to be replaced by coarse handled cups.

In the actual creation of the Rhenish bronze age diverse influences were at work. Several double-axes of copper with a perforation too small to take an actual shaft, reveal Ægean influence coming by the Atlantic coast route; for they connect on with a series extending from western France across the Rhine to Thuringia, thus marking an ancient trade route[5] (Map IV). The round-heeled daggers were probably inspired by

[1] *B.R.-G.K.*, X, p. 56; (5) p. 49.

[2] *Alteuropa*, p. 57.

[3] For the distribution cf. *P.Z.*, VI, pp. 39-54.

[4] *AuhV.*, V. pl. 2.

[5] *ZfE.*, XXXVII, p. 525—found in Indre, near Dijon, and at Luscherz in Switzerland.

Italian models and Mediterranean shells[1] adorned the corpses buried on the Adlerburg. But the pins with flattened and bent-over ends from the Adlerburg and stray specimens with a perforated, crutched, or raquet head mark the influence of Central Europe.[2]

The full bronze age of the Rhineland only began after the zoned beaker folk had departed for England, since pins of the Adlerburg type are unknown in this country. Thereafter the development was rapid and the introduction of bronze into eastern France was no doubt the work of the Rhenish metallurgists.

The evolution of the Alpine civilization from epipalæolithic times is a continuous and coherent process. But the Alpines do not appear themselves as a potent civilizing force. As they borrowed their own culture from the Danubian peasants, so it was only in so far as they came under Nordic, Iberic, or Danubian inspiration that their civilization progressed. The family tree of Alpine culture may be represented as follows :

B.C.	Epipalæolithic Alpines × Danubians		
2200	Lower neolithic	Aichbühl I. and (Constance)	Aichbühl I. and (River lake-dwellings)
2000	Middle neolithic	Altheim and	Michelsburg
1800	Upper neolithic	Mondsee	Bell and zoned beakers
1600	Chalcolithic	Bronze I.	Adlerburg
	WEST.	EAST.	NORTH.

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(1) J. Heierli, *Urgeschichte der Schweiz.* (Zurich, 1902).
(2) Munro, *The Lake Dwellings of Europe.* (London, 1890).

Latest results and theories.

(3) Th. Ischer, *Die Chronologie des Neolithikums der Pfahlbauten der Schweiz, AsA.*, 1919. (His typology has in several points been confirmed by Vouga's work, but is still *a priori*).
(4) Hans Reinerth, *Chronologie der jüngeren Steinzeit.* (Urgeschichtliches Institut, Tübingen).
(5) K. Schumacher, *Siedelungs-und Kulturgeschichte der Rheinland.*
(6) P. Vouga, *Essai de classification du néolithique lacustre d'après la stratification,* in *AsA.*, XXIV.
(7) P. Vouga, *Projet de classification du néolithique lacustre suisse* in *AsAg.*, IV.

All are well illustrated.

[1] *Columbella rustica, B.R.-G.K.*, X, p. 21.
[2] *ZfE.*, XXXVI, pp. 575f., XXXVII, pp. 794ff. Cf. our fig. 93, 6, 9, 7.

CHAPTER XVII

The Cultures of the South Alpine Slopes and the Italian Bronze Age

While the civilization of the northern slopes of the Alps proves to be specifically continental in type, that of the southern slopes has a distinctly Mediterranean tinge. Yet it is by no means identical with Mediterranean civilization as we know it in southern Italy or Almeria and cannot possibly be regarded as a mere province of the latter.

The "Neolithic" Period

By epipalæolithic times the mountainous region extending from the Pyrenees to the Julian Alps had been occupied by the Capsians spreading from Spain, while a few remnants of older palæolithic tribes had been wedged into Central Italy between the descending Capsians and the Mediterraneans coming by sea from the south.[1] The "neolithic" civilization of the same wide area, arrived at by a process of abstraction,[2] has so many common traits that the southern mountain region from the east coast of the Adriatic to Catalonia forms a single cultural province (Map I).

Its neolithic inhabitants were hunters and pastoralists rather than tillers of the soil,[3] which explains their wide range. They dwelt principally in caves, though in South France and Upper Italy round pit-dwellings were also inhabited. The caves were also used for burials. Sometimes the body was laid

[1] *Riv.*, XXV, p. 212.

[2] The "neolithic" material is almost always admixed with objects of copper or flints of chalcolithic type. But Catalan scholars recognise a pre-megalithic stone age in North Spain and South France while Italians and Peet distinguish the neolithic material of Upper Italy from the chalcolithic. Since the copper cultures of the two areas were due to perfectly distinct and well defined currents, the common remainder left when the accretions due to the later influences are abstracted, may be regarded provisionally as neolithic, cf. p. 262 below.

[3] At least in Italy.

in a specially constructed cist of small slabs,[1] sometimes the caves served as ossuaries[2] in which some investigators think the bodies were interred disarticularted.

The commonest implements were polished stone celts for the manufacture of which the " neolithic " herdsmen, like the Swiss lake-dwellers, showed a preference for greenstones such as jadeite. Perforated axes were not used. Flint served for the manufacture of simple knives from flakes with unilateral retouching and of transverse arrow-heads. The pottery was coarse and gritty, and ornamented only with plastic strips

FIG. 127. Material from the cave of Arene Candide, Liguria.

and finger-tips impressions,[3] as in the middle neolithic and later levels on the Swiss lakes. The square-mouthed vases from Ligurian caves, have interesting parallels both in Early Minoan I Crete and in the later grottoes of the Marne[4] (Fig. 127). The ladle or lamp illustrated from the same site recurs at Burgäschi in Switzerland, in a station assigned on typological grounds to Ischer's first period.[5]

1 In Italy and Catalonia (2) p. 466.
2 In France and Catalonia (2), p. 474.
3 (2) Figs. 103 and 112 ; *C.I.A.*, 1906, ii, p. 158.
4 Evans, *Palace*, Fig. 18, 2 ; *H.P.*, 1909, fig. 51.
5 *AsA*, 1919, fig. 18, 22.

The most remarkable ornaments were fine stone bracelets distributed from the Adriatic to Spain.[1] Cranian amulets as in the oldest Swiss lake-dwellings, were sometimes worn in the Trentino[2] and Liguria and are very common in the sepulchral grottoes of South France. But an example was found in a bronze age settlement in the Po Valley! So I must repeat that nearly all the "neolithic" caves have yielded also copper objects[3] or flints of chalcolithic type and "neolithic" types recur in the copper age "dolmens" of South France. So the civilization just described may not be really "neolithic" at all, but just a survival due to a barbarous people living in a backwater during the copper or even the bronze age.

In any case the civilization just described cannot be an extension of that of South Italy; on the other hand certain common traits, e.g., in the burial rites, imply a uniform ethnic basis in both areas. The explanation may be found as Peet has suggested, by attributing the "neolithic" cultures of North and South Italy respectively to two branches of the same African stock, the one, Peet's Ligures, coming via the straits of Gibraltar and thence overland, and the other travelling direct by sea. The Ligures might be identified with the Capsians, who were of African origin. In that case the neolithic elements in the cultures of Upper Italy, South France and Catalonia might be treated as borrowed from Sardinia. But it seems to me more likely that the culture of the southern mountain zone was due to an extension of the cave culture of Central Spain, where similar pottery and stone bracelets were in use.[4]

The eastward spread of this Spanish culture whose debt to the Mediterranean civilization of Almeria was pointed out in chapter IX, was, therefore, the basis of the oldest civilization of South France and Upper Italy. And it is now obvious why the foundation of the lacustrine civilization cannot be attributed to immigrants from this side. The later accretions in the Pyrenaic region and Provence due to the megalithic culture

[1] In France from Savoy, Bouches du Rhône, Puy du Dôme and Allier and as far north as Brittany and the Seine. *H.P.*, 1911, p. 310, *R.P.*, 1908, p. 140.

[2] Duhn, *Italischer Gräberkunde*, p. 19.

[3] Riveted copper daggers from the Grotta di Pollera (Liguria), copper celts from S. Joan d'Os (Lerida) and Cova Fondo (Salamo) (2), pp 475 and 477; cf. Chantre, *Âge du bronze*, II, pp. 8ff.

[4] So Bosch-Gimpera, *Ensayo*, pp. 29 and 35.

will be described in the next chapter ; here we shall henceforth confine our attention to Italy. And first of all some peculiarities of the stone age in Upper Italy must be noted.

In common with many other neolithic peoples the troglodytes of Upper Italy painted their persons, but the inhabitants of the caves of Liguria, the Trentino,[1] and Istria, and of the hut villages in the Po Valley made special clay stamps or *pintaderas* (Fig. 128, 1) for the purpose. The Italian stamps have been compared to the Early Minoan III button seals and also have remote parallels in South Italy on the one hand, and in Moravia, Transylvania and Bulgaria on the other. Southern relations of the cave-dwellers are proved by rare imports of obsidian found in Tuscan and Ligurian caves, by painted sherds from Liguria and the Trentino,[2] and by two clay idols from a Ligurian cave. But none of these objects necessarily imply a source further away than South Italy or Sardinia.

1. 2.

FIG. 128. 1, *Pintadera* from a cave in Trentino. After B.P., $\frac{1}{2}$.
2, " Neolithic " vase. Reggio Emilia ($\frac{1}{8}$).

On the other hand the spiral on a " neolithic " vase (Fig. 128, 2), from Reggio Emilia may be ascribed to Danubian influence if not colonization. But it is to be remarked that only two cases are known in which the Italians made use of *Spondylus* shell, one from the cave of San Pietrino in Liguria,[3] and the other from the Grotta del Diavolo in the heel of the peninsula.

THE CHALCOLITHIC PERIOD IN UPPER ITALY

The neolithic culture of the Apennine Peninsula was so poor that its very existence is doubtful. The chalcolithic civilization, best illustrated by the furniture of the great cemetery of Remedello in the province of Brescia, was very

[1] *B.P.*, XLI, p. 30 ; cf. (1). [2] *B.P.*, XLI, p. 25. [3] *B.P.*, XXVI, p. 36.

rich and lasted a long time. Its authors are supposed to have been the Ligures of neolithic times, but the inspiration came from without.

The chalcolithic types, particularly the daggers, show that the knowledge of metal came to Italy from two sides. The one type with marked mid-rib and rivets (Fig. 129, A), is purely Minoan and in Crete goes back to E.M. II. The type is represented at Remedello, but a specimen found with short-headed skulls[1] in the sepulchral cave of Monte Bradoni may explain why Minoan voyagers came to Upper Italy; for the cave lies in a staniferous region of Etruria.

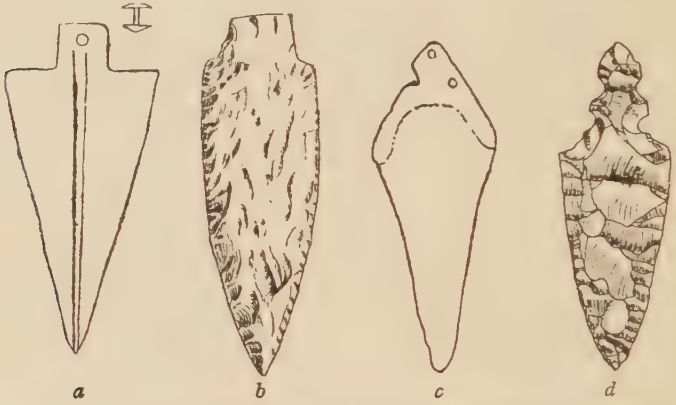


FIG. 129. Chalcolithic daggers, copper types with flint copies. After B.P. ½.

Besides the Ægean current prospectors coming from the West, presumably by way of Sardinia, are represented by daggers of West European type (Fig. 51 above), and bell-beakers found in flat graves at Ca' di Marco, Santa Cristina, and Remedello[2] all in the province of Brescia. The third and commonest type of copper dagger (Fig. 129, *c*), is a cross between the Ægean and West European; for the semicircular indent left by the hilt on the blade was also noticed on the dagger of Santa Cristina. The chalcolithic civilization as a whole is likewise compounded out of these two elements.

Beside daggers the graves of Remedello contain flat and even flanged celts, quadrangular awls, and possibly a halberd

[1] Sergi, *Europa*, pp. 278f; cf. p. 33 above.

[2] Åberg, *Iberic*, p. 185.

of copper, but no Hungarian battle-axes. Simultaneously with the introduction of metal came an improvement in the flint technique as in the Iberian peninsula. Implements finely flaked on both sides took the place of the old "Magdelenian" blades. Lance-points, tanged and barbed arrow-heads, and daggers were manufactured by the new method. The flint daggers correspond to the three types of copper dagger. That of Fig. 129, B is a type proper to metal, while the notches on Fig. 129, D reproduce the rivet holes of Fig. 129, C. The imitation in flint of such purely metallic forms disposes of the notion that the European metal daggers are based upon flint models and all *a priori* typologies relying upon that assumption must be dismissed.

Spheroid mace-heads were introduced in the chalcolithic period and polished celts of jadeite and other greenstones were still manufactured. They were now fitted into horn hafts which, like those of Aunjetitz, have a square-cut hole for the shaft (cf. Fig. 133, 3). Stone battle-axes with distinct heads (Fig. 130), are also found in copper age graves, but not at Remedello. The transverse arrow-head (like Fig. 2) was still in use. The ornaments from the Remedello cemetery include cruciform and star-shaped beads of marble, small plaques of *Cardium* shell perforated at each end for sewing on garments, as at Erösd, and a crutch (or hammer-) headed pin of silver.

The burials at Remedello and elsewhere as far south as the Tiber took place in trench-graves in which the skeleton lay doubled up. But in Central Italy the southern type of chamber tomb was also in use, and a skull from one of these bore traces of red ochre. Long and short-headed skulls occur at Remedello; elsewhere the Mediterranean type was dominant, but Schliz[1] claims some of the Remedello skulls as Nordic.

The chalcolithic epoch must have had a long duration. At Remedello alone no less than 117 graves have actually been identified. On the strength of the E.M. II dagger types, it may have begun about 2500 B.C., but unmistakable evidence of parallelism with the Aunjetitz culture of Bohemia suggests that it lasted till 1700 B.C.

The foundation of the copper age in Italy evidently resulted from connections with the Ægean, due, as has been

[1] *P.Z.*, IV, pp. 50ff.

suggested, to the need for tin. But the bell-beaker folk coming from the west must have been the Italians' masters in the new flint technique. And, as we have seen, they crossed the Brenner, thus opening up the amber trade-route that connected North Italy with Bohemia and Scandinavia. The flanged celts may be due to Bohemian inspiration though an Italian origin is possible. Moreover the Altheim-Mondsee copper culture is not only contemporary with Remedello, but may also have exercised a formative influence on its southern neighbour ; for some of its own roots lie further east. Indeed the stone battle-axes which seem to be derivatives of the polygonal type used north of the Alps, may mark an actual descent of Nordic warriors into the Apennine peninsula to whom the allegedly Nordic skulls at Remedello might belong (see Map II). Perhaps in Italy as at Altheim the Nordics established themselves as a ruling caste during the copper age.

Fig. 130.
Stone battle-axe, (¼).

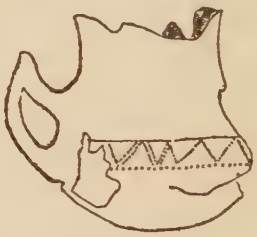


Fig. 131.
Vase from Italian Lake-dwellings.

Finally an actual overflow of peoples from the straitened Alpine valleys seems discernible in the same period. Pile-dwellings were erected on the Lakes of Maggiori, Varese, and Como. Their contents, stone battle-axes, finely-worked flint daggers and rare " bracers " show that, if their builders came from Switzerland, their departure cannot have antedated the chalcolithic epoch. And amber beads and even small bronze daggers betray connection with the North. On the other hand the pottery (Fig. 131), which is paralleled at Remedello, has no obvious prototypes in Switzerland, or in the East Alpine area (Fig. 125). Thus the chalcolithic civilization of Upper Italy was mixed, but distinctly continental in character. And

[1] For the date see (1) pp. 321f. But note that the intrusive nature of the pile-dwellings is not universally accepted in Italy, e.g. by Battaglia, *Riv.* XXV.

this culture spread southward at the expense not only of the "Campignian" food-gatherers in the centre, but also of the southern Mediterranean culture; for stone battle-axes occur, e.g., on Vibrata Valley (Map III), in the latter province.

The Early Bronze Age

The foundations of the Italian bronze age were already laid in the Remedello epoch. The amber trade across the Brenner focussed Ægean influences on the head of the Adriatic in the seventeenth century. The same traffic brought the Italians into contact with the Aunjetitz culture; Bohemian tin may have been the recompense for their services as intermediaries between Greece and Central Europe. Finally the halberds carved on the rocks of the Ligurian Alps and actually found in Latium and Venetia commemorate a visit from the bronze-using peoples of south-east Spain. The actual welding of these Eastern, Northern, and Western influences into the original bronze age of Upper Italy may be the work of the lake-dwellers and the mixed chalcolithic population whose hut-villages and inhumation necropoleis last well into the Middle Bronze Age in Eastern Emilia.

The sum total of the product constitutes Montelius' first period of the true bronze age.[1] The leading types are flanged celts with an indentation in the butt (Fig. 91, 3), flat triangular daggers with bronze hilts (Fig. 92), and armlets like Fig. 91, 11-12. These types, above all the celts and daggers, were spread widely throughout central and northern Europe wherever the ramifications of the amber trade extended. Fortunately this period can be dated with some precision by the fact that the halberd from Shaft Grave VI at Mycenæ is typologically later than that found with typical celts in the depôt of Montemerano in Latium. The Early Bronze Age must have been mature by the seventeenth century.

The Middle Bronze Age

At least from the beginning of the Middle Bronze Age[2] a new phenomenon is noticeable in the Po Valley—pile-dwellings on dry land, called *terramare*. These villages were

[1] (3) pls. 2, VI. and VII.

[2] Montelius' period II of the bronze age represented by a few graves only cannot really be recognized as a separate epoch. I treat periods II and III together as the Middle Bronze Age.

trapezoidal in shape and were surrounded with a moat and within this a rampart. The settlement was divided internally by two main streets intersecting at right angles. A mound in the south-east quarter formed a sacral area within which a ritual trench and several sacrificial pits were dug. The *terramare* thus exactly reproduced the plan of the Roman camps of historical times. Near each village two cemeteries of cinerary urns were laid out.

The *terramaricoli* seem to have introduced into Italy the manufacture of clay models of animals and the remarkable handles of which the horned and crescent types (Fig. 49 above) are the most notable. The vases to which these handles belonged were grey or black and well polished. A favourite form was a shallow cup with high handle that has, like the clay animals, Danubian II analogies. The implements of the pile-dwellers included winged celts, razors, and sickles of bronze (Fig. 49), though stone was still sometimes used even

FIG. 132. 1, *Terramare* spear-head, ¼. 2, Violin-bow fibula. Peschiera, ½.

for the manufacture of perforated axes. In their armoury were numbered the curious spear-heads of Fig. 132, 1, and short swords, but no metal battle-axes.

To fasten their robes they used a great variety of pins in which types with a double-spiral head, rather more wiry than those of Troy and the Cyclades, trilobate pins like Fig. 93, 8, and the variety with an eyelet in the neck deserve especial notice. In the *terramare* of Servirola a broken Nordic fibula of the two-membered type (like Fig. 102, A) was found. It was no doubt an import from the north and formed the model for the violin-bow safety pin, invented in Upper Italy (Fig. 132, 2).

The very form of the *terramare* proves the rigid discipline, the strict social organisation, and elaborate religious system of their builders. We see in them the characteristics of the later Romans as clearly as their architecture provided the model for the Roman camp. And *terramaricoli* were warriors as well as agriculturalists and pastoralists. They were also metallurgists. These people were the dominant element in Italy during the

Middle Bronze Age ; for, as we have seen in chapter VI, they spread south as far as Taranto. However the pile-settlements on the Italian lakes were still inhabited while the old land villagers continued to live in pit-dwellings and inhume their dead.

It is generally believed that the *terramare* were not built by descendents of the early lake-dwellers, but belong to a new invading stock coming from Central Europe. It is quite essential, however, to say distinctly that the *terramare* civilization as revealed in Italy has not yet been identified anywhere in Central Europe. The so-called *terramare* of Hungary did not, so far as we know at present, conform to the peculiar plan invariable in Italy. And in any case the entire absence of the characteristic Hungarian metal weapons is quite incompatible with an East Hungarian origin. A sort of crescent handle was in use from Galicia to Bosnia. But the Galician-Bohemian-Moravian types (Figs. 112, 118 above) are several stages removed from the Italian. Those in Hungary, associated with Pannonian ware, were only contemporary with the Italian and this fabric really forms the prototype of the Villanova urns which reached Italy at a later date, perhaps, with a different people. The Bosnian pottery may be still later. Finally, as shown in chapter XII, cremation was only coming into use in Hungary during the Middle Bronze Age and we do not know that any of the Continental lake-dwellers practised this rite ; for no graves belonging to lake-dwellers have ever been discovered. The general burial rite in Central Europe in the Early Bronze Age was certainly inhumation. Finally, the antecedents of the *terramare* bronzes[1] cannot with certainty be identified in an earlier stage of their evolution in Central Europe.

Nevertheless the theory of an invasion from across the Alps seems well founded. The well-planned villages of Michelsburg and Aichbühl and the fortified stations of the Altheim group reveal, not indeed the direct ancestors of the *terramare*, but phases of an as yet undiscovered prototype developing perhaps in Carinthia or Western Hungary. In Lower Austria we can see the fusion of the crescent-handled

[1] The safety pin is not common in Central Europe as far as the simplest type is concerned ; there are a few from graves at Gemeinlebarn in Lower Austria, *JZK.*, I, p. 43, only stray specimens in Hungary (3), and a few from barrows at Glasinac in Bosnia, *W.M.B.H.*, I, p. 88. See addenda.

pottery coming from the north-east with the lake-dwelling pottery of the Eastern Alps, and a mixture with Danubian types might be expected further south.[1] And after all the latest corded-ware barrows on the Rhine cover cremated bones.

So the *terramare* appear as the monuments of an invading people from Central Europe who in Upper Italy assimilated to their own tradition the technique of local metallurgy which was itself already continental in type. The resultant culture, purely Central European in character, dominated the Peninsula from one end to the other, proving once more the emancipation of continental civilization from dependence on the Mediterranean.

The chronology of the Middle Bronze Age in Italy is perfectly clear. On the one hand safety pins including secondary types appear both in Greece and Sicily before the close of the Mycenean age ; on the other hand good Mycenean imports are found in the upper strata at Taranto and fully formed Middle Bronze Age types occur below them. Thus the *terramare* culture must have been mature in the fourteenth century.

AUTHORITIES

(1) Peet, *The Stone and Bronze Ages in Italy and Sicily* (followed for Italy unless other references are given).

(2) Institut d'estudis catalans, *Anuari*, Vol. VI, Part II. For the cave culture of North Spain.

(3) O. Montelius, *Die vorklassische Chronologie Italiens*, 1912.

[1] The handles from Velem St. Vid, County Eisenburg (von Miske, *M.A.G.W.*, XXX, fig. 10) and some from Monteoru in Wallachia from an inhumation grave of the Early Bronze Age (*ZfE.*, XXXIX, p. 1000, figs. f and g), stand close to the Italian types.

CHAPTER XVIII

Atlantic Civilization

The Megalithic Culture of France

France is the classic land of megalithic architecture, and North Spain, omitted from chapter VIII, can conveniently be treated as an annex of the French province. There are more "dolmens" in this region than anywhere else in Europe, and so the real contribution of the megalith-builders to the stock of European civilization can best be judged from their achievement here. But before proceeding to that question, a survey of the foundations and other influences is needed.

Non-Megalithic Elements in the Neolithic Culture of the West

In the West European province extending from the Rhine and the Alps to the Atlantic and the Gulf of Lyons, epipalæolithic remains are very numerous. In North Spain indeed no continuation of the culture of the Asturian fishers[1] can be identified, but a barrow at Axpea (Alava)[2] covering a sort of polygonal cist containing several corpses, microliths, flint blades with no retouching, and pieces of red ochre might be regarded as late Tardenoisian. But throughout the flint-using province which extends from Belgium to the Seine and Marne and pushes southward wedge-like to Dordogne epipalæolithic types are very common.

On the strength of the Campignian picks and hatchets found in and around the numerous flint mines and workshops in this province, it might be thought that the Franco-Belgian industry began in epipalæolithic times with the same apparatus as that of the Ertebolle folk of the Baltic. Moreover, the

[1] Above, p. 17.

[2] *Bol. r. Soc. Españ. de Hist. Nat.*, 1918, pp. 468f; the diameter of the sepulchral chamber was 1.90 m.

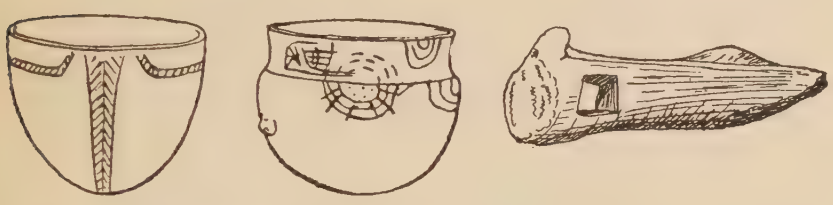
polished flint celts with pointed butts, supposed to be characteristic of Montelius' " period I " of the Nordic stone age, are common to France, Scandinavia, and England.[1] On the other hand the West European thin-butted celts have a pointed-oval cross-section in contradistinction to the Scandinavian type with squared small sides. Finally the Nordic thick-butted celt is a stranger to the west. Thus one might think that a single culture using Ertebolle-Campignian types occupied the whole of north-west Europe from the Atlantic to the Baltic, and only differentiated in period II of the new stone age into distinct Nordic and Western provinces with a frontier traced by Åberg[2] through Holland and Westphalia (Maps I-III).

It would, however, be rash to apply to France the Scandinavian typology. As we know already,[3] Campignian types were in use in the west into the iron age and connected finds accompanying celts with pointed butts are lacking in France as in Scandinavia. We do not even know what sort of life was led by the makers of the western thin-butted celts. The typological parallelism with Scandinavia is clear, but provides no ground for assuming a cultural uniformity. For the transformation of the epipalæolithic culture of the west into a neolithic one we must look elsewhere.

In Belgium the Danubians (Omalians) introduced the true neolithic civilization when it was already old in Central Europe. The civilizing mission of the Danubians may have affected France too. Hut foundations at Villejuif (Seine)[4] yielded sherds with curvilinear decoration and others recalling the Danubian stroke-ornamented ware, associated with polished flint celts and a schist bracelet, but also a " blade " of real bronze. From what may have been a ruined grave with reddened bones at Frignecourt (Marne), a peasant collected a bracelet of schist and three of *Spondylus* shell, as in Danubian I graves, but also, it would seem, a horn axe with square-cut shaft-hole (Fig, 133, 3) of bronze age type and two rich bronze rings.[5] Hence these finds, if they really belong to Danubians, can only denote a late colonization of North France (Map III).

[1] (1) pp. 12-14.
[2] Åberg, *Nordic*, pp. 10ff.
[3] p. 18, above.
[4] *L'Anthr.*, 1897, pp. 388ff.; note figs. 13, 15 and 17.
[5] *R.E.A.*, 1901, pp. 291ff.

Further south the material from the Camp de Chassey (Côte d'Or) may be due to an extension of Alpine culture into eastern France, but this site too has yielded an undifferentiated mass of horn and stone and bronze implements[1] and so is not certainly very early. The lake-dwellings of the Savoy and



1 2 3

FIG. 133. 1-2, Vases from Breton megaliths. 3, Horn Pick, Frignecourt ($\frac{1}{4}$).

Jura are of course just an extension of the Swiss, but their neolithic date is not unimpeachable.[2] Finally in the south and on both sides of the Pyrennees ruled the extension of the cave-culture of Central Spain described in the last chapter, but again the material is scarcely to be distinguished from that of the chalcolithic and bronze age "dolmens."

The West European Megalithic Culture

The foreign influences enumerated above touched only the fringe of our province; the dominant culture was that of the great stone graves. But no clear picture can be given of the life of the megalith-builders. The cult of the dead overshadowed all else; few settlements have been identified,[3] even the furniture of the tombs themselves is poor and often dubious. These monuments were naturally exposed to violation and contain objects of Roman and Christian date which cannot have belonged to the original grave-goods. To arrive at the latter a process of critical selection is entailed. Unfortunately French excavators were wont in the past to give rather the results of this selection than an objective statement of what was actually observed. At the same time

[1] (8) i, pp. 353, 523 and 554; ii, p. 121; cf. p. 257.
[2] (8) i, pp. 367f.
[3] There are numerous fortified stations assigned to the stone age, but their date is really very doubtful; cf. p. 298 below.

the ruined condition of many monuments makes the application of the Scandinavian typology to the sepulchral architecture hazardous. Hence any description of French megalithic culture must be unusually provisional and even subjective.

It is no accident that the oldest and most numerous western megaliths cluster about the south coasts of Britanny and the Channel Islands ; for it is just here that early voyagers travelling to the gold-fields of Ireland and the amber coasts of Denmark would be most likely to call, and gold was once found in Britanny too. But even here the existence of simple

1 2

FIG. 134. 1, Le Moustoir, Carnac. 2, Motte de la Garde, Charente.

dolmens may be doubted ; the archæological record begins with passage graves (Map II).

In contrast to the megaliths of the Iberian peninsula and Scandinavia, many Armorican megalithic tombs are said to have contained exclusively cremated remains. That rite was certainly not, however, invariably practised[1] and may have arisen in the first place from the accidental scorching of the inhumed bones by the purificatory fires always kindled in collective tombs. The furniture of the tombs betrays their direct connection with the Portuguese. The earlier vases

[1] Not e.g., at Port Blanc, *Trésors arch. de l'Armorique occidentale*, text to pl. 26.

were round bottomed bowls sometimes carinated and provided with string-hole lugs for suspension. To allow them to stand upright the curious clay supports of Fig. 134 were made. The arcs and curvilinear motives adorning some Breton vases (Fig. 133, 1-2) have been interpreted by Hoernes[1] as the result of Danubian influence.

An extension of Danubian colonization to Britanny is by no means impossible, but in view of the lateness of the intermediate stations in North France the Breton vases are more probably to be connected with the Portuguese and Spanish examples of curvilinear decoration. On the other hand an interesting proof of the maritime trade to which the foundation of the megalith culture in Britanny has been ascribed, is furnished by an isolated copy of a collared flask from the passage grave of Lann Blaen (Morbihan).[2] It may have been made to the order of some sailor returning from a voyage to Denmark.

Beside the pottery, transverse arrow-heads, celts of stone, fibrolith, and rarely flint, disc-rings of lignite, simple beads of calläis, rock-crystal, and talc and celtiform pendants may be reckoned among the older elements in the graves. On the evidence of the tomb types it looks as if the megalithic culture had already extended its sway south-east to the Loire and Vendée.

Then at a definite point in the passage grave epoch the bell-beaker folk reached Britanny ; for these vases appear as a late element in some passage graves and as the earliest furniture of the covered galleries. The beakers themselves conform strictly to South Spanish types ornamented with simple zones like Fig. 59, 3-4, above. Thus the vases and their users must have come from the Iberian peninsula by sea. The advent of the " prospectors " produced the same revolution in Britanny as elsewhere.[3] Gold,[4] flint imported from Grand Pressigny, finely-worked lance and arrow-heads, and bracers[5] are found only in those passage graves which contain beakers, while in covered galleries beakers are accompanied by copper

[1] *Urgeschichte*, p. 202.

[2] *Mannus*, XIII, p. 145, fig. 55 (at Kernuz).

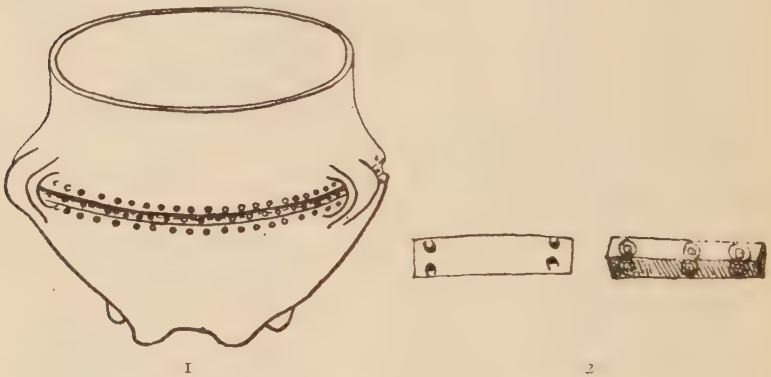
[3] My account is based on personal observations in the museums of Vannes and Carnac, and of M. du Chatellier at Chateau Kernuz.

[4] A long strip perforated at the ends like Fig. 86, 4, from Mané Lud (Carnac).

[5] Kerallant (Finistère) (Kernuz).

daggers of West European type,[1] spheroid mace-heads[2] and rare atypical perforated axes.[3]

So the usual idea that the Breton beakers are neolithic is entirely false. Once again the beaker folk appear as metallurgists, prospectors, and traders. To their intervention may be ascribed the commencement of regular trade in the flint of Grand Pressigny (Indre-et-Loire)—the local industry itself may be much older—which reached Switzerland in the chalcolithic epoch and was also diffused to North France and Belgium as well as Britanny. The rare stone battle-axes reaching as far south as Loire Inférieure may indicate relations with Britain, as rather similar types are met in our bronze age while the mace-head may be Danish. The beakers themselves



1 2

FIG. 135. 1, La Halliade (⅓). 2, Catalonia (¼).

reached the Channel Islands to the north and spread inland to the Loire,[4] but did not reach Central France (Map III).

The bell-beakers provide a means of synchronizing the megalithic culture in the north-west with that in the south of our province ; for they recur on both sides of the Pyrenees and at the mouth of the Rhone (Map III). In the Hautes Pyrenées[5] bell-beakers (Fig. 59, 3) have been found with beads

[1] In Finistère at Penker and Souc'h (9), p. 28.
[2] Souc'h.
[3] Le Petit Mont (Vannes), Krugou (Kernuz).
[4] In the covered gallery of Motte de la Mairie with gold and callăis (*B.A.*, 1891, pp. 37f), and Grand Carreau Vert (*Mat.*, 1886, p. 283), Loire Inférieure. Cf. also the vases with oculi as at Los Millares from Availles (Deux Sèvres) (8) i fig. 235 ; cf. Figs. 1d and 99, 3, above.
[5] *Mat.*, 1881, pp. 522f ; cf. 1884, p. 580.

of calläis and gold and a long strip of the same metal, like Fig. 86, 4, in the covered gallery of La Halliade associated with curious polypod vases (Fig. 135, 1). In Catalonia[1] and the Basque provinces[2] of Spain they again appear in covered galleries or megalithic cists accompanied by copper objects and, in Catalonia, by the prismatic plaques of Fig. 135, 2. Near Arles[3] they are associated with gold strips and beads and calläis in megalithic galleries excavated in the ground. Finally some were met in corbelled tombs in the Maritime Alps.[4] The furthest extension north of this group of beakers is represented by some fragments from a ruined "dolmen" at Cranves, near Geneva.[5]

All the bell-beakers of the southern group are decorated with the same simple hatched zones as the Andalucian, Sardinian and Breton. This ornament is unknown to Central Spain so that the beakers did not reach the Pyrenees overland from Andalucia. They may have spread backwards from Britanny or else have arrived by sea from Sardinia. The Catalan prismatic plaques and the polypod vases can both be paralleled in the island. Personally I incline to think that the beaker folk reached the coasts of the Gulf of Lyons from Sardinia and then followed the Garonne to the copper-bearing area west of the Pyrenees, while others landed in Catalonia.

The association of beakers and megaliths in the south of France, as in Britanny, may be accidental and so it remains to ask how the megalithic culture reached the Pyrenees. Apart from quite isolated passage graves in Catalonia well up in the mountains, the oldest type in this region seems to be the covered gallery with beakers linking on to more northerly examples.[6] Still later come short cists which look like simple dolmens, but the furniture of which reveals them as degeneration products. The Catalan cists contain rich bronze rings, metal arrow-heads, amber beads, and carinated vases of El Argar type. Those further west are poorer and slightly earlier in type. With copper beads and awls and rock-crystal they

[1] (4) pp. 483 and 489.
[2] (3) (Pagobakoitza).
[3] Castellet, Cazalis de Fondouce, *Les allées couvertes de Provence.*
[4] *Mat.*, 1885, pp. 164ff.
[5] Åberg, *Iberic*, p. 177.
[6] (4) pp. 506 and 528ff.

contained many French types of beads and pendants[1] like Figs. 136, k, and 138, a single perforated stone axe[2] like the rare specimens from West France, and one trepanned skull.[3] In all the Pyrenaic megaliths short-headed skulls are common.

Bosch Gimpera regards the Pyrenaic megaliths as an extension of the Portuguese culture, but both the type of the tombs and the furniture strongly support the view of Leeds[4] that the "dolmens" were introduced into North Spain from France, where a considerable brachycephalic element existed. Typologically we should get a good series working back from the north-west. But here a further digression is necessary to describe the famous "dolmens" of the Cevennian region which are crucial for a right understanding of the megalithic culture of the west.

In form the majority of these tombs resemble the simple dolmens of Scandinavia, but at least two of them had a holed-stone entry[5] as in the northern covered galleries. All were of course collective sepulchres. The majority of the corpses had been inhumed, but frequent cases (twenty-five per cent.) of cremation have been reported. A remarkably large number of the skulls had been trepanned. It speaks volumes for the skill of the early surgeons with very primitive instruments that the subject often survived the operation. But his contemporaries attributed his fortune to some supernatural powers, and after his death made cranian amulets out of his skull. However, while survivors of the surgical operation were preferred for this end, other skulls were also subjected to *post mortem* trepanning to provide the magical amulets.[6] A considerable brachycephalic element existed in the population.

The furniture[7] of these monuments is remarkably uniform, but curiously mixed in type; for it is composed partly of metal and partly of stone and flint. Celts were rare, but at least one copper specimen is known. As weapons finely worked arrow-heads of many types and daggers of flint[8] were regularly used,

[1] Pagobakoitza (3), p. 40, pl. 15.
[2] (2) pl. 8.
[3] (3) p. 18.
[4] *Arch.*, LXX, p. 230. But the celt from Bidaarte ((2) pl. 10) resembles the Portuguese type of Fig. 55, 2, above.
[5] (8) i p. 403; (5) figs. 89f.
[6] (8) i pp. 475ff.
[7] Based on the list in (7), esp. p. 60, unless other reference is given.
[8] Types illustrated in (5), figs. 110-130.

but in isolated instances copper or bronze arrow-heads and even riveted daggers like Fig. 136, b, were employed. The wealth of ornaments is bewildering (Fig. 136). Stone, bone, teeth, and copper or poor bronze were the regular materials, but these were supplemented by precious substances imported from afar, amber, calläis, jet, rock-crystal, blue paste, and even iron,[1] but in no case gold or silver. Slate palettes,[2] as

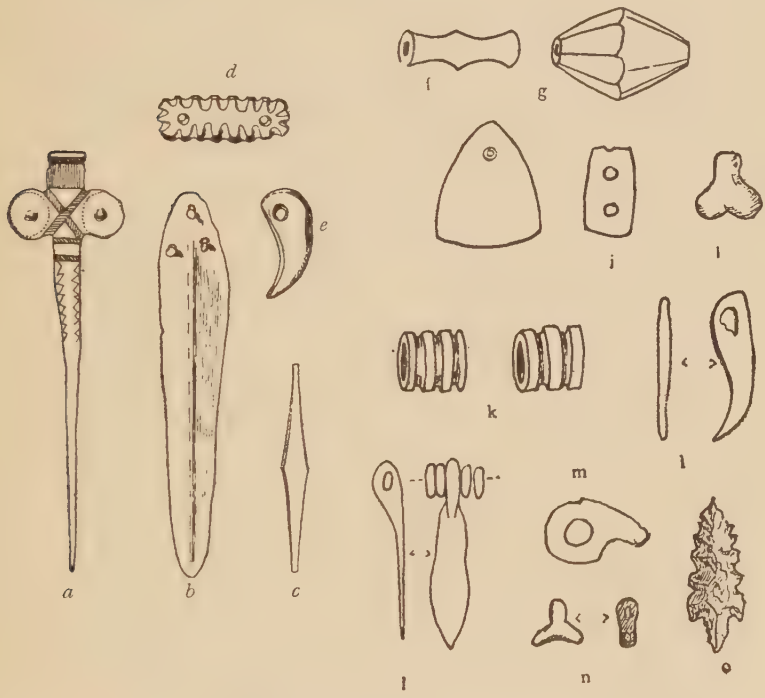


FIG. 136. a-e, Liquisse ($\frac{1}{3}$) ; f-i, Grotto d'en Quisse, Gard ($\frac{1}{3}$) ; j-o, "Dolmens" of Averyron. a-c ; f-g, and l, copper ; d-e, jet ; h-k, stone ; m, iron.

in Egypt, Crete, and the Cyclades, were employed presumably in the toilet and "bracers" were sometimes made to protect the archer's wrist. The furniture of the natural sepulchral caves in the area is precisely the same. Finally in Aveyron, Tarn, Herault, and Gard statue menhirs carved with representations of a funerary goddess, often armed with an axe, were

[1] *C.I.A., London*, 1868, p. 354 and pl. i, 20-21.
[2] (8) i Fig. 214.

set up, sometimes at least over tombs, e.g., over the corbelled tomb of Collorgues (Gard)[1] (Fig. 137, a).

At first sight this civilization seems to provide just the support needed for the theory of an Egyptian origin for the megalithic tomb. Here is a seemingly very ancient group of "dolmens" situated in a metalliferous region and built by people who did actually seek out precious substances. The statue menhirs can be compared to the effigies set up in the *mastaba* chapels; the slate palettes have ancient Egyptian antecedents; the beads of Fig. 136, j, n, k, though not Nilotic, have Early Minoan and Cycladic prototypes. Is not South France a great and early centre of megalithic civilization, planted by Children of the Sun, of which even Portugal, Britanny and Denmark are only poor reflections?

No. The Cevennian culture is neither early nor great. The immediate parallels to these tombs are neither the Egyptian *mastabas* nor the Scandinavian dolmens, but the Catalan cists and the covered galleries of the Seine which contain a parallel furniture, but in time belong to the Central European bronze age.[2] The female deity sculptured on the megaliths, again with parallels in the covered galleries further north, is far removed from the portrait statues of the Nilotic chapels which were of course not always female. The real criteria of date are not the phallic beads with early antecedents, but the trefoil[3] (Fig. 136, a) and raquet[4] pins (like Fig. 93, 7), which have nothing to do with the Eastern Mediterranean, but evolved in North Italy and Central Europe towards the end of the Early Bronze Age, and were carried thence to East France by the intrusive people who built the bronze age barrows of the Savoy and Jura.[5] And the iron beads, though they have disappeared from literature since 1868, certainly belonged to the original furniture of two "dolmens"; for they formed parts of typical necklaces.

[1] *Afas.*, 1890, pp. 629ff and figs. The plans of the tomb given by Déchelette and Montelius are inaccurate.

[2] p. 213 above, and p. 283 below.

[3] *R. Et Anc.*, XIII, p. 435 (Liquisse).

[4] *Mat.*, 1869, p. 328, fig. 35. Note too the collocation of bone tubes like the Early Cycladic type of Fig. 20, 1, with a bone segmented bead that might be an imitation of the M.M. IIIb fayence type, and a poor bronze dagger in the cist of Cabut, Gironde. *B.S.A. Bordeaux*, 1904, pl. XI.

[5] (8) ii, p. 137. In Italy such pins occur at Peschiera (Bronze III), Montelius, *C.P.I.*, i, pl. 7, 7.

So the Cevennian epoch is not a rich and early copper age, but a degraded survival belonging to a time when progressive people in North Italy, Central Europe and Britain were already expert in bronze casting ; for apart from rare bronzes in the megalithic tombs and contemporary caves, no Early or Middle Bronze Age graves or settlements are known from South France. It follows from this that the authors of the culture were no missionaries of progress, but backward barbarians. What should we think of noble Egyptians who wore copper imitations of bored tusks like Fig. 136, l ? They are just the sort of trinkets which sophisticated traders would palm off on savages. Here they may represent the recompense for allowing the amber trade to pass through the area.

The multitude of collective sepulchres shows that the Cevennian epoch lasted for many generations. Its roots may indeed go back to the end of the third millennium ; for the beads (such as Fig. 136, k) betoken Early Ægean influence (see Fig. 14, 2 c) and the first European centre of cranial surgery may be located in South France, whence its practice was introduced by the beaker folk into the Danube valley. But the material is surprisingly uniform throughout and the bulk of it must belong to a period subsequent to the bell-beaker episode reaching down at least to the fourteenth century B.C. So the "dolmens" of the Cevennes may be regarded as the last degeneration of the series of megaliths, the earlier stages of which are found in Britanny, and the final result of an expansion from the north-west. Though the beaker prospectors and trade routes to the west along the Garonne[1] and to the north along the Rhone[2] traversed their territory, the dolmen-builders were incapable of profiting therefrom, and remained in a chalcolithic stage of culture till they were superseded at the end of the bronze age by the Celts coming from Central Europe.

After this digression we can return to Britanny. There the later covered galleries may be regarded as contemporary with the cists in the south. But they belong already to the bronze age as occasional flanged celts and thick bronze rings found in them show.[3] To the same epoch may be attributed the remarkable megalithic cists of Mont Saint Michel, Tumiac,

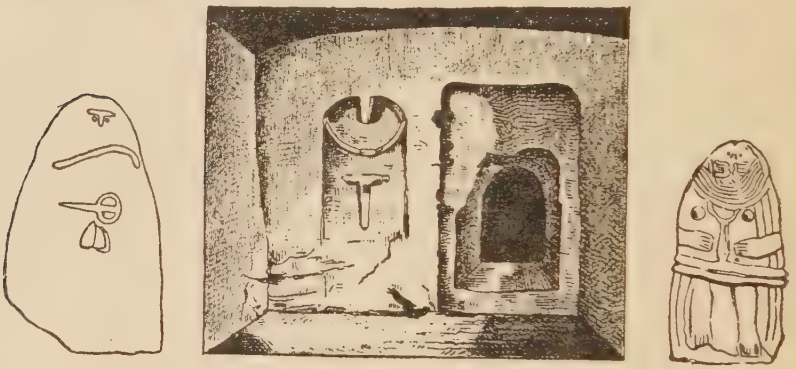
[1] The western end is marked by the cist of Cabut.

[2] Marked by the amber beads in North France, the Cevennes, North Spain, and South Italy (Map IV).

[3] Lesconil (9), p. 47.

and Mané er Hroek[1] in Morbihan, enclosing cremated remains and surmounted by huge barrows. They contained no metal and no pottery, but enormous celts with pointed butts of polished stone or jadeite, like those of the Rhineland, jadeite bracelets, and beads of calläis, rock-crystal and bone. In form these strange monuments are comparable to the bronze age barrows of North Britanny and Normandy, which are not a continuation of the local megalithic culture.

It was in the period of the covered galleries that the megalithic culture first reached North France (Map IV). In the valleys of the Eure, Seine, Aisne and Oise[2] the tombs were very long covered galleries often provided with a holed-stone doorway like those of Sweden and West Germany. In



a *b* *c*

FIG. 137. *b*, Grotto of Petit Morin, Marne; Statue menhirs. *a*, Collorgues; *c*, Saint Sernin.

some a rough figure of the sepulchral goddess was carved in the entry. In the Marne[3] region the flint-miners made artificial grottoes for the interment of their dead. The majority were simple chambers containing a multitude of corpses, some allegedly cremated, and showing a distinct short-headed strain. In others a regular antecella preceded the funeral chamber proper. The walls of the antecella were sculptured with representations of the funeral goddess (Fig. 137, b).

[1] *B.S.P. Morb.*, 1921, pp. 44f; bits of bronze have lately been found in a subsidiary cist at Mont Saint Michel.

[2] (8) i, pp. 398f.

[3] See (5). It is impossible from this report to distinguish precisely the furniture of the several tombs.

These more elaborate tombs, belonging presumably to the chiefs, contained fewer corpses than the others, but their furniture was enriched by rare beads of amber, calläis and rock-crystal.

Apart from the precious substances in the royal tombs the furniture of the Marne grottoes and the covered galleries of the Seine-Oise-Aisne is much the same. The typical objects are transverse arrow-heads, polished flint celts, blades of Grand Pressigny flint, cranian amulets, arc-shaped pendants (Fig. 138), rings and bracelets of stone and very coarse vases. The celts were regularly inserted in horn sleeves or in hafts with a square hole for the shaft[1] (like Fig. 133, 3). The latter, being bronze age in type, show that the rare metal objects found in the tombs—not only beads and blades[2] of "copper," but also rich bronze rings and flanged celts and palstavs[3]—are not later intruders. Thus the covered galleries of North France, like the Scandinavian, are contemporary with mature phases of the Danubian and British bronze ages.

Fig. 138.
Arc-shaped pendant of stone (⅔).

The sculptures and the grave goods show connection with the Cevennian culture and at the same time confirm the late date of the latter. The calläis and Grand Pressigny flint denote intercourse with the West[4]; the short heads and the horn sleeves must be due to Alpines. Finally I agree with Kossinna in deriving the holed-stone *via* Westphalia and Belgium from Thuringia. The isolated example from Britanny, one from Vienne[5] and the two from South France, must be due to a further extension of the same influence. Indeed the chief formative factor in North France may have been due to the retreat of the North-west German megalith-builders before the advancing separate-grave folk described in Chapter XIII. The stray bronzes were due to traders from Britain who we know crossed North France.

[1] Marne (5), fig. 39, Seine, de Mortillet, *Musée préhist.*, no. 508.
[2] Marne (1), p. 14.
[3] Seine, *Afas*, 1899, p. 590; *Mat.*, 1876, p. 161.
[4] The arc-shaped pendants from Vienne, Charente, Jersey, and North Spain may be the reflex. *B.S.A. Par.*, 1893, p. 581. One was found in a bronze age hut in Italy.
[5] *R.E.A.*, 1906, p. 283.

But no true bronze age grew up here. As the Abbé Breuil[1] very pointedly remarks, it is precisely in the post-Campignian "neolithic" stations that early bronzes occasionally occur.

The other manifestations of the megalithic culture, *menhirs* or erect monoliths, *cromlechs* or circles of upright monoliths, and the carvings on the tombs cannot here be discussed. In any case the theory of Schuchhardt[2] that seeks the origin of the Ægean idols in an embodiment of the spirit of the ancestor in the originally aniconic *menhir* is quite incompatible with the late date of the megalithic culture. Déchelette[3] is undoubtedly right in reversing the process and deriving the tutelary goddess who presides over the French tombs from the Great Mother of the Ægean.

The megalithic culture of France can now be assigned to its true place in the history of civilization. Its authors were skilled in a rude sort of engineering and could transport enormous blocks over considerable distances and set them up to form mighty tombs. But superstition absorbed all their energies; the cult of the dead overshadowed all other activities. Its votaries, preoccupied with their gloomy ritual and fettered by sacerdotal conservatism, originated nothing. Neither the advent of the bell-beaker folk nor the civilizing currents of commerce roused the western megalith-builders from their ghostly preoccupations to the creation of an original bronze age.

No such period existed in France. On the eastern borders[4] invaders burying their dead in simple trench graves or under barrows brought with them the bronze age types of Central Europe, but they did not advance beyond the Saône[5] in the Early or Middle Bronze Age. In the north-west other intruders using halberds of Irish type[6] and bronze daggers with the wooden hilt studded with thousands of gold nails after the English model[7] occupied part of Normandy and the north of Britanny. They generally cremated their dead, depositing the remains under barrows, either in wooden coffins, or small

[1] *Afas*, 1899, p. 592.

[2] *Alteuropa*, pp. 78 and 165f; S. Reinach equally claimed French sculpture as the prototype for the Ægean, *L'Anthr.*, 1894.

[3] (8) i, pp. 594ff.

[4] (8) ii, pp. 136ff, so Piroutet, *L'Anthr.*, XXVIII, p. 64. Note the jadeite celts with pointed butts in the bronze age graves of Savoy.

[5] Igé, *R.P.*, 1908, p. 141, with flint celts.

[6] (8) ii, fig. 60

[7] *B.S.A.*, *Fin.*, XXIV, pp. 126f, fig. 7.

corbelled vaults, or rectangular chambers of small stones surmounted by a megalithic capstone. They were not the descendents of the megalith-builders who were in fact still building covered galleries at this time on the southern coasts, but came presumably from the British Isles or the Rhine. Along the west coast numerous stray bronzes and early depôts testify to the regular trade between Britain and the Mediterranean along the Garonne, but not to the existence of local metallurgy. In the heart of the megalithic territory[1] the use of metal was only introduced late in the bronze age by invading Celts, who conquered the superstitions of the natives by force of arms and imposed upon them the civilization of Central Europe.

Fig. 139. Bronze age vase. Britanny.

Thus the legacy left by the " Children of the Sun " was only a dark superstition which retarded progress.

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(1) Nils Åberg., *Studier öfver den yngre stenåldern i Norden och Väst-europa.* (Norrkoping, 1912.) (References to the French resumé.)

(2) Aranzadi and others, *Exploración de ocho dólmenes de Altzania.* (San Sebastian, 1921).

(3) Arazandi and others, *Exploración des seis dólmenes de la Sierra de Aizkorri* (*Ibid.*, 1919).

(4) *Anuari.* Institut d'estudis Catalans, 1916-20.

(5) Baron J. de Baye, *L'Archéologie préhistorique.* (Paris, 1884.)

(6) Emile Cartailhac, *La France préhistorique d'après les sépultures.* (Paris, 1889).

(7) E. Chantre, *Études paléoéthnologiques dans le bassin du Rhône. Age du bronze,* Vol. II.

(8) J. Déchelette, *Manuel d'archéologie préhistorique, celtique, et gallo-romaine.* (Paris, 1908-10).

(9) Paul du Chatellier, *Les époques préhistoriques et gauloises dans le Finistère.* (Rennes, 1907.)

(10) P. de Mortillet, *Origine du culte des morts.* (Paris, 1921.)

(All are illustrated.)

[1] The non-megalithic cists of Britanny, Charente, Vienne, Lozère and Côte d'Or may belong to the bronze age, but the furniture is so poor as to suggest connection with the Swiss Chamblandes culture (10), pp. 79ff.

CHAPTER XIX

Atlantic and Central European Cultures in Britain

The prehistory of Britain provides a pleasing contrast to that of the province last described. Yet the foundations in both areas were the same. Epipalæolithic remains of Tardenoisian, Maglemose, and Campignian type were widely distributed as we saw in Chapter I. In the flint-using provinces of the east of England the old miners continued to exploit the pits of Grimes Graves and Cissbury into neolithic times and even later. Here as in France the development of the celts showed a typological parallelism with that of Scandinavia again diverging from the latter in the period of the thick-butted form which was unknown to England (Maps I and II). The "neolithic" lake-dwellings of Holderness and Berkshire,[1] whatever their real age, may be attributed to survivors of the Maglemose fishers and the inhabitants of the "neolithic" huts near Peterborough may belong to the same stock; for, like the descendents of the epipalæolithic tribes who created the culture of the Swedish dwelling-places, they left their dead in the huts,[2] and their pottery was curiously parallel to that of Scandinavia and the Baltic.

The Neolithic Period

The transformation of the epipalæolithic culture of the eastern part of England may have been partly due to influences emanating from Central Europe. Some sherds with curvilinear ribbon ornament from Oxfordshire[3] suggest the possibility that the ubiquitous Danubians crossed the sea to England—they were accustomed to the navigation of rivers. A barrow at Biggin, Derbyshire, covered a single skeleton with which lay a sort of stone *pintadera*, a bit of red ochre, a celt

[1] *Arch.*, LXII, p. 336ff, but the upper levels of the Holderness settlements belong to the Iron Age.
[2] *Ant. J.*, II, p. 227.
[3] *Ibid.*, p. 236, fig. 15.

(? thin-butted) and the remains of a collared flask.[1] Though the form of this interment corresponds to the type prevailing in the bronze age, it is just possible that it may be due to one of the separate grave folk of period II in Denmark, who had crossed the North Sea.

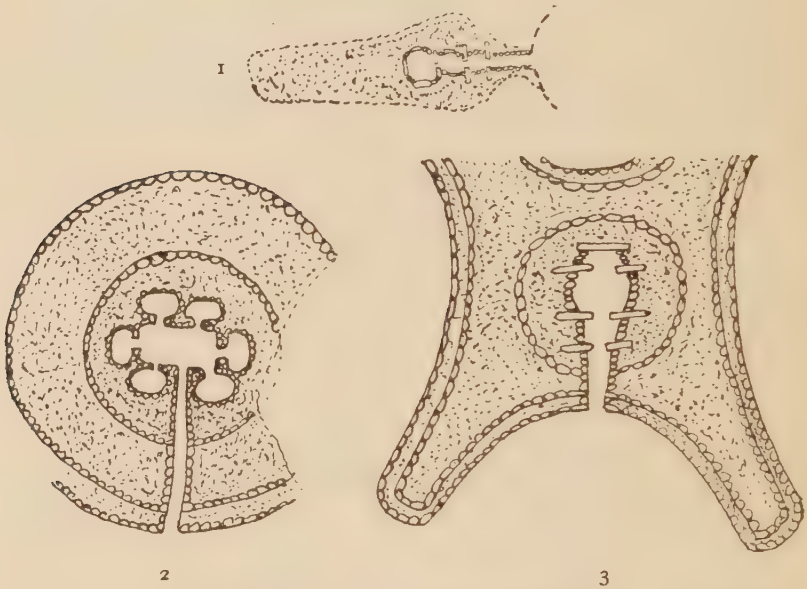
Apart from these very slender traces of impulses coming from the east the main inspiration which reached Britain like France in the stone age came by sea from the south and is reflected in the spread of the megalithic tombs. "Dolmens" are common in Ireland, Cornwall and Wales and there are some on the coasts of Devon, Dorset, and Wiltshire, and perhaps one in Kent.[2] Thus their distribution is essentially western and coastal (Map II). But they have yielded no furniture and many "dolmens" may really be only ruined passage graves.[3]

The true passage graves—chambered long barrows and chambered cairns—show a tendency to expansion inland just as in other areas affected by Atlantic culture, but their spread along the west coast of Scotland and round the north, which may be compared to the diffusion of Minoan beehive tombs in Greece, shows their intimate relation to coastal trade (Map III). In type the English and Scottish[4] passage graves diverge considerably from the standard shapes described in Chapter VIII.

The usual passage dolmen with a polygonal chamber roofed with megalithic slabs is rare.[5] Such tombs contain the same furniture as monuments with a corbelled roof. But the plan of the majority of English and Welsh passage graves is essentially a corridor with lateral chambers. The whole structure was covered by an enormous elongated barrow projecting horn-like arms crescent-wise on either side of the entry of the central corridor, to form a sort of fore-court.[6] The roof may be either built of megalithic slabs or a corbelled vault of smaller stones. Variations on the same plan are

[1] *Man.*, VI, 44.
[2] Based on the list in (7), pp. 195ff.
[3] (4).
[4] So little is known about the type and contents of the Irish megaliths that they are omitted.
[5] West Kennet, Wilts., Yr Ogof, near Llanwrst, and some in Anglesea conform to this type.
[6] "Dolmens" such as Wayland's Smithy, Berks., and Coldrum, Kent are really ruined tombs of this type, cf. *Ant. J.*, I, p. 197, and *Man.*, IV, 12.

exhibited by the chambered cairns of Scotland (Fig. 141). In the West of England a degeneration led to a type in which the central corridor was suppressed and the chambers open directly on to the long side of the mound though the forecourt into which the corridor should open, was preserved. In some of these in Gloucestershire, Wales, and the Isle of Man, the chamber is entered by a holed-stone doorway. Finally in parts of England such as southern Wiltshire and Yorkshire, where megalithic tombs do not occur, collective interments took place



FIGS. 140-1. Chambered cairns. 1, Rhinaire, Sutherland. 2, Quoyness, Orkneys. 3, Onieghel, Caithness.

under unchambered long barrows. It is possible that such monuments were passage graves built of wood, like the corbelled tombs of logs found in Holland.

All the long barrows were collective sepulchres. The usual rite was inhumation, but in Yorkshire the bodies were always cremated after the barrow had been erected.[1] If the barrow had originally covered a wooden passage grave, the ignition of the timber from the usual purificatory fires would

[1] Cf. (5) pp. 496 and 506.

explain the curious phenomena observed. In Argyll and Caithness cremation is well attested. The long-barrow men were short in stature, and long-headed. They used to be described as Mediterraneans, but Fleure[1] and others now incline to regard them as descendents of the indigenous palæolithic stock of the west. The megalith-builders may have introduced the domestic animals to Britain; for the bones of domestic swine, cattle, and sheep are found in the barrows and in Scotland the bones of horses[2] occur, though nothing is said about their domestication. On the other hand the absence of remains of cultivated grains and the fine condition of their teeth as contrasted with those of the agricultural bronze age invaders imply that the long-barrow men did not practise agriculture.

A clear picture of the life of these people is hard to obtain; for the grave goods are extraordinarily poor. For weapons they used beautifully worked leaf-shaped flint arrow-heads (Fig. 143, 2). Only one celt has actually been found in a collective tomb—a flat green-stone axe[3]—but a thin-butted flint celt of Nordic type is reported from the mound of the Uley barrow. The neolithic pottery was dark-faced and the principal shape was a round-bottomed bowl. The Scottish bowls were carinated and the linear hatchings and occasional arc-motives show intimate relation with Armorican passage grave pottery (Fig. 142, 2). But the English bowls had carefully moulded rims and were decorated with the "maggot-pattern" made by the imprint of a twisted string (Fig. 142). Their form and decoration correspond most closely to those of the Baltic fishers' ceramics and stray vases from early passage graves in Denmark.[4] Our vases are not certainly restricted to the megalithic area and their eastern parallels may be due to a common preceramic prototype imitated independently by the same people on both sides of the North Sea.

The builders of the long barrows decked themselves with teeth, but occasionally added beads of jet.[5] In some Scottish

[1] *Races of England and Wales.*

[2] Also in the pit-dwelling near Peterborough (*Ant. J.*, II, p. 220), but not in English long-barrows.

[3] At Clachaig, Arran, *P.S.A.S.*, XXXVI, pp. 86f, fig. 11. Perforated cushion-shaped mace-heads were found in Arran and Caithness, *ibid.*, fig. 23, (Siiddery), (2) fig. 243.

[4] *Arch.*, LXII, pp. 346f; cf. *Nord. Fort.*, II, fig. 72, from Jutland.

[5] From the "false passage grave" of Eyford, Glos. (5), fig. 162.

cairns jet buckles have been met, but they are regarded as intrusions of the bronze age.[1]

That the introduction of the megalithic culture was due to voyagers coming from the south-west would follow from its distribution alone. The reality of prehistoric navigation is

FIG. 142. Neolithic Pottery. 1, Thames (1/4); 2, Stennis, Orkneys (1/8); 3-4, Long-barrow of West Kennet, Wilts (1/4). By permission of the Trustees of the British Museum.

strikingly proved by the discovery of a dug-out boat plugged with cork, which must have come from the south, accompanied by a greenstone celt on a raised beach in Scotland. Whatever may be thought of the supposed dolmens, the architecture of

[1] *P.S.A.S.*, XXXVI, p. 104, fig. 29; XLIII, fig. 8, p. 338; cf. *ib.* I, p. 221.

the chambered long barrows and cairns finds its explanation in Spain and the western Mediterranean.

The corbelled roofs,[1] the serially arranged round or oval chambers, the holed-stones, have parallels in Almeria. Indeed the horned cairn of Rhinaire (Fig. 141, 1) reproduces exactly the plan of some beehive tombs at Los Millares. On the other hand the rectangular chambers with lateral niches in the Orkneys (Fig. 141, 2) repeat above ground the subterranean chambers of Anghelu Ruju in Sardinia. The cultural identity underlying the later civilizations of the North Atlantic and West Mediterranean is illustrated by the manner in which the Scottish broches repeated not only in structure, but also partly in their furniture, e.g., square-mouthed vases, and lamps and bracelets of stone—the features of the Sardinian *nuraghis*. Yet just as the *nuraghis* belong to the later bronze age, so the Scottish structures were in use in the first centuries of our era.[2]

The finely worked flint arrow-heads from the collective tombs again have parallels in South-east Spain, and show the influence of the same foreign flint technique observed at Los Millares, while the ceramic evidence proves that Britanny was a mediator in this diffusion of culture. Its mechanism was primarily commerce. The series of tombs along the west and north coasts of Scotland mark the trade route that linked Denmark and Spain. The Danish amber and English jet from the chalcolithic tombs of Los Millares are fruits of the traffic along this route. On the other hand the absence from the tombs of Britain of all trace of metal and of bell-beakers is very striking. The bell-beaker folk had gone as far as the Channel Islands ; it looks as if the south-western relations of Britain must have been interrupted before the prospectors had reached Britanny, perhaps before the fusion of the orientalizing culture of Los Millares with that of Central Spain and the extension of the mixed product to Portugal.

The trade along the Atlantic coasts then must have been the principal source of the neolithic culture of Britain as a whole, though it is to be noted that the long barrows do not touch the flint-using region of the east. No actual colonization

[1] Uley, Glos., Caithness (2), p. 233, Argyll (2), p. 270, Sutherland, *P.S.A.S.*, XVIII, p. 230 ; but the possibility of a local origin for the false vault must not be forgotten ; for in Britain, too, the "neolithic" huts were round.

[2] *P.S.A.S.*, XLVI, p. 187 ; XLVIII, p. 37 ; XLIX, p. 66.

on any large scale is presupposed in the phenomena of our new stone age. The neolithic arts and the idea of megalithic architecture may simply have been taken over by the natives from traders touching on the shores.

Mr. Perry has, however, recently argued in an elaborate monograph, that the diffusion of the "dolmens" and long barrows in Britain was due to actual settlements of treasure seekers who exploited the British deposits of gold, tin, copper, lead, pearls, red ochre, jet, and flint. He has been able to establish a reasonably close relation between the monuments and the substances in question.[1] But in some cases his explanations are far fetched. Why, for instance, if the exceptionally numerous long barrows of North Wiltshire are due to the attraction of the flint, are there none in Surrey or Norfolk? And, of course, there is not a single trace of gold, copper, tin, lead, or pearls in long barrows, and, with the exception of a single bead, the jet ornaments are of the types used by the invaders of the bronze age. Mr. O. G. S. Crawford's view that the neolithic people were chiefly guided in choosing sites for their settlements by the need for avoiding the dense forests and marshy tracts, explains the distribution of the monuments better than Perry's theory.[2]

In any case Atlantic civilization as revealed to us by the British tombs was a poor and barbarous product. But it did not last long. The British tombs contain few corpses in comparison with those of the Continent.[3] The reason is that the development of the megalithic culture here was cut short by the arrival of fresh invaders burying their dead in separate graves under round barrows.

The Bronze Age

There is no disagreement about the origin of the new people. They came immediately from the Rhineland. We have seen in Chapter XVI how the battle-axe folk of Thuringia became mixed with the bell-beaker folk and perhaps some

[1] *Memoirs and Proceedings of the Manchester Literary and Philosophical Society*, 65 (1921), No. 13. Note that short cists containing a single corpse are not distinguished from the genuinely megalithic collective tombs.

[2] (4). The erection of a chambered cairn over an old midden heap in Bute (*P.S.A.S.*, XXXVIII, p. 40) might be used equally to prove a continuity or a break in population.

[3] The maximum number in Gloucestershire was 13; cf. also Fox, *Archæology of the Cambridge Region*, p. 13.

Alpines between the Elbe and the Rhine. This mixture explains the pottery, the racial characters, and the habits of the new arrivals in Britain. The beaker which they placed in their barrows and used in their houses, is in its form and coarse technique a corded beaker, but the style of its decoration is due to the bell-beaker.[1] The invaders of Britain, like the bell-beaker prospectors and the continental lake-dwellers, were short-headed, but skeletal and cranial peculiarities are held to prove an admixture of Nordic blood.[2] The British barrows correspond in form to the Thuringian and as in Central Europe their builders used stone battle-axes. Traces of the same movement which brought the zoned beaker folk to Britain are to be found in tumuli covering corbelled chambers of wood in Gelderland, in which the burials with zoned beakers are sometimes found at a higher level than the graves with true corded ware,[3] and in the intrusive beakers in the passage graves of Drenthe.

So the mixed people descended the Rhine and then crossed to England.[4] Once arrived on these shores the invaders spread rapidly. With them they brought the use of metal. Even the oldest graves contain occasional flat celts or triangular metal daggers, and Crawford[5] has shown an exact correspondence between the distribution of the simplest metal tools and the beakers in Britain. In Bavaria and Thuringia as elsewhere, the bell-beaker folk had used metal and a round-heeled dagger with rivets was found with a zoned beaker on the Rhine, near Mainz.[6] Hence though flint and stone were common in the round barrows, the foundation of the British bronze age is safely attributable to the intruders from Central Europe.

The Early Bronze Age in Britain which was thus inspired from Central Europe was extraordinarily rich. An enumeration of the objects found in the round barrows with beakers would be tedious. It is only necessary to point out the main conclusions to be drawn from them.

[1] Åberg, *Iberic*, pp. 178 and 194.
[2] Cf. note 4 on p. 148.
[3] *P.Z.*, IV, pp. 369ff, esp. fig. 3.
[4] One true corded beaker has been found near Colchester (*Ant. J.*, II, p. 338) and some sherds from the "neolithic" huts near Peterborough showed cord impressions and horizontal herring-bone ornament very like Swedish Sösdala ware, *ib.*, II, p. 222, figs. 1 and 2; cf. fig. 100, above.
[5] *G.J.*, XL, pp. 184ff, maps 2 and 4.
[6] *M.Z.*, 1913, p. 52, figs. 1 and 2.

The beaker folk not only introduced metallurgy to England. The first traces of cultivated plants have been found in their graves. The finely worked barbed arrow-head was another innovation (Fig. 143, 1). Gold was freely employed even for vases and at an early date the invaders began to add Cornish tin to copper in the standard proportion of one part to ten. Schuchhardt[1] even suggests that the discovery of bronze was made in Cornwall; for the juxtaposition of tin and copper there provided favourable conditions for making that advance. There are, however, grave chronological difficulties in the way of regarding any British bronzes as older than the celts from treasure A at Troy. Basket-shaped earrings like Fig. 144 are certainly derived from Trojan types and may be parallel to rather than descended from the Bohemian wire type.[2] But the connection of Britain and Troy seems to

1 2

Fig. 143. Flint arrow-heads (½).

Fig. 144. Gold earring. After Arch. LXI. (⅔).

have been chiefly indirect mediated through Central Europe, where we have recognised North Ægean influence at work in the period of the bell-beaker, that is older than the zoned beakers of Britain.

The British heritage from Central Europe is illustrated not only in the pottery but also in the bracers of stone and bone which are identical with those met with the bell-beakers on the Continent (Fig. 85), and in the decoration of gold discs which recurs on bone in Bohemia[3] in prospectors' graves. On the other hand the stone battle-axes which here continued in use into the second period of the bronze age, resemble the

[1] *Alteuropa*, p. 145.

[2] One was found in Belgium with an Italian Middle Bronze Age razor, *Mat.*, 1885, p. 318.

[3] Cf. e.g., *P.A.*, XXVI, p. 87, fig. 40.

double-bladed group found in the passage graves of Denmark (cf. Fig. 99, 2). Dr. Nils Åberg[1] has sought in the English axes the root from which all stone battle-axes were sprung, a curious inversion of the real facts ; for the Thuringians who on Åberg's own view in a late stage of their history participated in the invasion of Britain, had used battle-axes from the beginning !

Direct trade across the North Sea brought to Britain amber beads and necklaces while the Scandinavian axe-shaped bead (Fig. 99, 1) was imitated locally in jet and lanceolate flint daggers of types belonging to the later passage graves recur here in the round barrows.[2] Near West Hartlepool actual sherds of Danish passage graves pottery have been found.[3] The Nordic types found here belong exclusively to the passage-grave epoch ; no representatives of Montelius' period IV are known. Yet the forms in question are not restricted to the first period of the British bronze age, but continue into the

Fig. 145. Blue paste beads. Round barrows, Wiltshire (½). By permission of the Trustees of the British Museum.

second,[4] showing how the use of metal began here early in the Scandinavian passage-grave epoch.

In contrast to the obvious connections with Central Europe and Scandinavia evidence for connection with the south during the first period of the bronze age in Britain is extraordinarily slight. The famous limestone drums from a barrow in Yorkshire are usually regarded as being in some sense " Iberic " and our jet buttons, ring-pendants, and spool-shaped beads have Early Minoan and Cycladic prototypes. But it is not until the second period of our bronze age that definite Ægean imports in the shape of segmented beads of blue paste of the M.M. IIIb type (Fig. 145) already met at Fuente Alamo in Spain, and imitated near the mouth of the Garonne, testify to direct sea trade along the western route.

[1] *Typologie der nordischen Streitäxten*, p. 6.
[2] *Proc. Soc. Antiq. London*, 32, pp. 6ff (daggers) ; (1) ii, p. 61 (beads).
[3] *Proc. P.S.E.A.*, III, p. 25, pl. 1—they are of early passage grave type and may be pre-beaker here.
[4] *Arch.*, LXI, p. 117.

And some Scottish authorities regard even these beads as a local product. They were certainly imitated in Scotland in a by-product of the smelting furnaces and large star-shaped beads were made of the same material.

The rarity of south-western types in England and the riches of the round barrows belonging to the invaders, in contrast to the poverty of the neolithic long barrows, shows how small was our debt to the "Children of the Sun," or whoever introduced the Altantic culture, in comparison with the contribution made by Central Europe. Yet the newcomers from the east did not at once overrun the whole island, nor exterminate the old population. Even in England an overlapping is noticeable, for instance, near Peterborough, where the same hut contained neolithic pottery and, perhaps at a higher level, beaker ware.[1] In Scotland the collective chamber tombs probably remained in use into the beginning of the bronze age. The beakers, tanged arrow-heads, jet buckles and beads, and other bronze age objects[2] found in the chambered cairns are not to be regarded as intruders in the same sense as, for example, Roman coins, but rather as proofs of the continued use of the family vault a little after separate interment has come in elsewhere. Finally in Ireland where the beaker folk only just reached the north coast the megalithic culture presumably continued to flourish.

The overlapping of the two cultures accounts for the relative density of collective tombs in the three Kingdoms. They are most numerous in Ireland, where the invaders scarcely got a foothold, and relatively rare in England, because of the early advent of the continental culture. And as the two cultures overlapped in time, so their respective authors must have intermixed. In the round barrows of Yorkshire the number of long heads belonging to the old stock is almost equal to that of the intrusive short heads. Such overlapping and intermixture helps to explain some phenomena of the second period of the bronze age.

In the latter period cremation superseded the rite of inhumation which had been brought from Central Europe. It seems to have begun in Yorkshire and Scotland, where it had

[1] *Arch.*, LXII, pp. 336ff.

[2] Cf. *P.S.A.S.*, XIX, p. 343; XXXVI, p. 104; XLIII, p. 340; L, p. 221 for the bronze age types.

been practised in the long barrows. "Food-vessels" (Fig. 146), more often accompany cremated bones than beakers, though the latter are associated with cremated remains especially in Scotland, while conversely in the west, particularly in Ireland, "food-vessels" accompany contracted skeletons. Now the food-vessels are derived from the neolithic bowls,[1] and, when they accompany unburnt bodies, the skulls are often dolichocephalic.[2] So the funeral rites and the pottery of the second bronze age betray a reaction of the older culture on the invaders.

Moreover the invaders took over from the natives certain cults which give a peculiar character to "Ancient British" civilization. The megalithic stone circles, corresponding to

FIG. 146. Food vessel. By permission of the Trustees of the British Museum.

the French *cromlechs*, are more numerous in Britain than anywhere else in Europe. There is little evidence that any of these monuments are neolithic,[3] and it is generally agreed that the greatest, Stonehenge, belongs to the bronze age. But such monuments were unknown in the Rhenish home of the bronze age invaders, while their megalithic structure connects them with Atlantic culture. So it must be assumed that the invaders adopted a local cult. Its powerful hold upon their minds is shown by the enormous size of Stonehenge[4] and the labour expended in bringing the material from Cornwall.

[1] (3) p. 69.
[2] (1) i, p. 145.
[3] At Arbor Low, Derby, a bronze age barrow had disturbed the encircling trench, but at Crichie, Aberdeen, a bronze age cist lay under the central monolith.
[4] Mr. Stone, while agreeing that Stonehenge belongs to the very end of the stone age, regards it as pre-beaker (6), p. 41, but his difficulties will be overcome on the view here advanced.

Hence the mature bronze age civilization was mixed in character, though the main lines were fixed from the time of the invasion and all that was vital in it had come from Central Europe. Despite the size of the religious edifices, their builders in the bronze age continued to live in unpretentious pit-dwellings. But some of the numerous earthworks and fortifications may go back to the Early Bronze Age ; for in the Rhineland the zoned beaker people certainly fortified their settlements. However, in Britain, although even " neolithic " types are found in such stations, they are almost always mixed with iron age objects.[1] The real achievements of the bronze age peoples must be judged by their skill in metallurgy. The decoration of the hilt of a dagger[2] by means of thousands of tiny gold nails shows not only extraordinary technical skill, but really fine artistic feeling. And the wealth of the people is illustrated by the gold cups from Cornwall and the amber cups from Hove.

The chronology of the British bronze age[3] can be determined with unusual precision. On the one hand the types characterizing the second period were still in use in the sixteenth century, when M.M. IIIb beads were being imported ; but the same period also overlaps with the passage grave epoch in Scandinavia. On the other hand the invasion which ushered in the bronze age cannot itself be much earlier than period IIIc in the Danube, and the middle of the passage-grave epoch further north. The invasion therefore cannot, on the Danubian chronology exposed in chapter XII, be older than the twentieth century B.C. That date harmonizes well with the limits for period II given by the Minoan imports and the date between 2000 and 1800 B.C. arrived at independently by Gowland and Lockyer for the erection of Stonehenge.

A chronology for the stone age may be reached inferentially from these data. Since the use of long barrows in

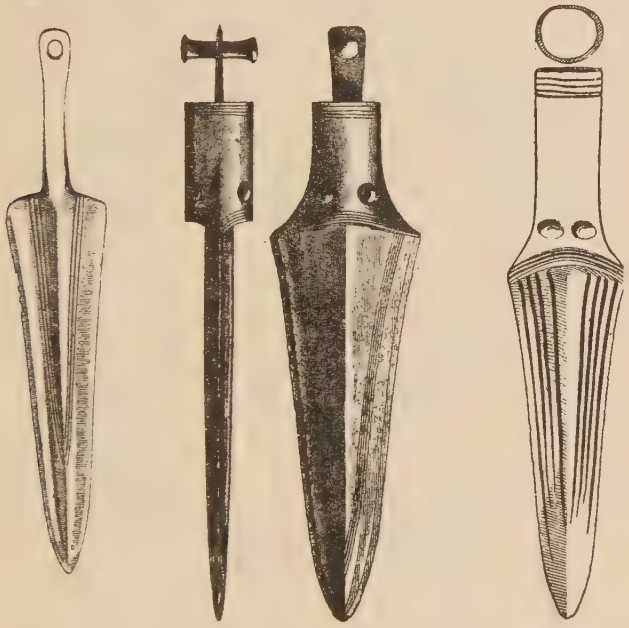
[1] Even the lowest levels at Traprain Low contained socketed celts and glass bracelets ! *P.S.A.S.*, LVII, pp. 193f.

[2] *Arch.*, LXI, p. 121; Evans, *Bronze Age Implements*, fig. 289 (Normanton, Wilts.).

[3] The typological division of the bronze age proposed by Montelius, *Arch.*, LXI, does not quite coincide with that based on the ceramics and grave goods. Beakers are characteristic for period I, though true bronze is sometimes associated with them ; the food vessels should be assigned to period II though they partly overlap with the beakers and survivals of the copper age. With this modification, Montelius' system works well. Cf. *P.S.A.S.*, LVII, pp. 123ff.

Britain does not cover any very long time and overlaps with the beginning of the bronze age, no passage grave in these islands need be older than 2300 B.C. And since the influence of Los Millares is observable in the corbelled chambers, the British evidence tends to confirm the Spanish chronology advanced in Chapter IX.

It is now clear that Britain was well ahead of all her continental neighbours in the use of bronze. The originality of our ancestors may be illustrated by the novel developments



1 2 3

FIG. 147. Evolution of the spear-head. After Greenwell, *Arch.*, LXI. 1, Hittlesham (Suf.); 2, Snows Hill (Glos.); 3, Arreton Down (¼).

of the spear-head.[1] The socketed type here arose, like the socketed celt in Denmark, out of a ring added to keep the flat-tanged spear-head in place. The ring, separate in period II (Fig. 147, 2), came in the succeeding phase to be cast in one piece with the blade (Fig. 147, 3). So a form quite like the Minoan type was produced by an entirely different procedure. On the other hand in Ireland, though the British custom of separate interment superseded the use of collective tombs,

[1] Greenwell, in *Arch.*, XLI.

copper continued in use some time after the addition of tin had become general in Britain, and Spanish influence was very strong. The halberd of El Argar was adopted and modified in Ireland during period II, whence it was transmitted to Britanny and via Britain to Central Germany.

The bronze age civilization of Britain naturally was a beacon to inspire her less advanced neighbours. That the use of bronze in the north was due as much to British as to Bohemian influence, would be a legitimate inference from the

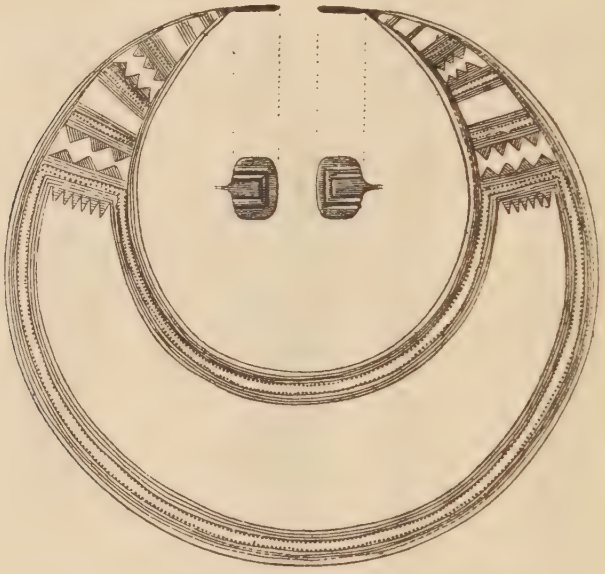


FIG. 148. Gold lunula. Irish type. British Museum.

diffusion of English celts to Sweden and the Province of Saxony, of the halberds in Central Germany and of gold lunulæ (Fig. 148) throughout North Europe (Map IV). A measure of our advance over our one-time continental masters is given by the fact that these objects and crutched and hollow-headed pins (Fig. 93, 9, 6), which all belong here to the well-defined second period of the bronze age[1] are on the

[1] *Arch.*, XLI, p. 114, figs. 41, 43 and 59. *P.S.A.S.*, LVII, p. 127. Lord Abercromby (1), ii, p. 63, interprets this fact to our disadvantage, forgetting that the relative poverty and lateness of the continental bronze age makes the finer division which results in period II here, unnecessary and impracticable.

Continent assigned to the undifferentiated Bronze I or Early Bronze Age. Southward the intruders into Britanny who made the bronze age there, used types corresponding to those of Bronze II in Britain, and British bronzes are spread along the coasts of the Bay of Biscay along the same trade route which brought the segmented beads to England and to Gironde.

So Britain had achieved a truly original and independent civilization already in the Early Bronze Age by 1600 B.C. But it is only fair to add that Britain did not partake in the brilliant development which marks the Middle Bronze Age of Italy, Central Europe, and Scandinavia. Cults and superstitions inherited from the Atlantic culture stifled progress and left these islands a prey to later invaders from Central Europe armed with more modern weapons, e.g., leaf-shaped swords, than native metallurgy had produced.[1]

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(1) Lord Abercromby, *The Bronze Age Pottery of Great Britain and Ireland*, 1912.

(2) J. Anderson, *Scotland in Pagan Times*. (Edinburgh, 1886.)

(3) British Museum, *A Guide to the Antiquities of the Bronze Age*, 1920.

(4) O. G. S. Crawford, *Long Barrows*. (*Ordnance Survey Professional Papers, No.* 6, 1922.)

(5) Greenwell and Rolleston, *British Barrows*, 1877.

(6) E. H. Stone, *Stonehenge*, 1924.

(7) Sir Bertram Windle, *Remains of the Prehistoric Age in England*, 1909.

For the chronology see V. Gordon Childe, *When did the beaker-folk arrive?* (*Arch.*, LXXIV.)

[1] *Ant. J.*, II., pp. 27ff.

EPILOGUE

With the arrival of the bronze age invaders in Britain the process of cultural diffusion to which the first foundations of Western civilization were due may be said to be complete. Thereafter the principal regions of Europe were in the possession of peoples who were masters of their own food supplies, were elaborating their own schools of metallurgy and were linked together by certain commercial relations. The several stages of the transformation of the world of food-gatherers with which we began in Chapter I to this state of civilization are shown diagrammatically in Maps I to IV. On the last map the distribution of Irish goldwork, German halberds, Cypriote daggers, and amber beads illustrates some of the commercial trade routes by which the regions of bronze age Europe were united.

The same diagrams reveal the centres of higher life from which civilizing influence radiated. In the Ægean, Egyptian and Sumerian inspiration created a truly European civilization. In Central Europe the Danubian peasants were the pioneers of progress. Both these areas became interconnected in periods II and III and in them progress was continuous. The results of westward diffusion of East Mediterranean achievement were different. The great civilization of Los Millares in Spain like that of the Arabs later on, succumbed to a process of slow degradation. Perhaps it was too oriental to survive on Western soil. The megalith-builders of the Atlantic, despite their stupendous monuments, played on the actual evidence derived from the monuments themselves, a much smaller rôle than recent writers have assigned to them. Scandinavia and Britain were the only megalithic regions in the whole of Europe where the rise of a truly progressive civilization can be traced. To account for the contrast between the rapid progress observed in South Scandinavia and the stagnation which ruled in the west and further north, the hypothesis of an invasion from South Russia has been invoked. The invaders from the south-east have been represented as the

vehicles by which Mesopotamian inspiration was transmitted to Central Europe, there to combine with Ægean, Danubian, and West European elements in the production of a highly original civilization. To the latter and not to the Atlantic, the British bronze age was principally indebted.

Still the immigration from Russia remains only a hypothesis. A contrary view is in the field, and I must repeat that it will explain some of the phenomena better ; for on it the blank in South Russia left on Map IV could be filled with invaders coming from the north as it is on our Map III by hypothetical nomads advancing to the north.[1]

Apart from the uncertainty attaching to the origin of the " Nordic " element, the commercial relations and movements of peoples by which " Nordic," Southern, and Western elements were focussed in Central Europe have been traced in the chalcolithic and early bronze ages and the later manifestations which belong already to the dawn of history were only the further result of the same forces.

[1] But this " blank " is illusory. The later ochre-graves of South Russia (the catacomb graves of p. 144) contain bracelets like Fig. 91, 11-12, and other Early Bronze Age objects, and Prof. Tallgren kindly informs me that he has collected evidence for the existence of a true bronze age in the Ukraine.

EXPLANATION OF MAPS

Important Note. The boundaries of the several provinces are approximate only. Often, especially in the Balkans, the lack of adequate data makes an exact definition of the frontiers impossible. Subsequent discoveries may allow one or more provinces to be linked up into one. In marking the distribution of type objects the same difficulty is met, especially in Russia. In any case only limiting finds have been regularly marked and objects have been included on one map though they belong properly to the period covered by another for reasons of space.

MAP I. EUROPE IN PERIOD I THE FIRST HALF OF THE THIRD MILLENNIUM B.C.

Provinces

I The Minoan civilization (chapter II).

II Cycladic civilization (chapter III).

III Anatolian civilization (Troy I, chapter IV).

IV Greek neolithic culture of Thessalian II except Dimini (chapter V).

V Sicilian and South Italian neolithic culture (chapter VI).

VI Almerian culture, neolithic (chapter VIII).

VII ? Cave cultures (chapter VIII).

VIII Portuguese neolithic culture, ? first dolmens (chapter VIII).

IX Area where unpolished implements of Campignian or Nøstvet or Suomusjärvi types, occur (chapters I, XIV and XV).

X Danubian I civilization (chapter XII).

XI Cultures with painted pottery, Erösd-Dimini, Cucuteni A-Tripolye A (chapters V and XI).

XII Oldest ochre graves (chapter X).

The blank areas were probably uninhabited.

Areas frequently referred to are here defined in the sense in which the names are used in this book.

EUROPE IN PERIOD I
Cist graves of Chamblandes type
FINLAND
OLONETZ
ESTHONIA
LATVIA
LITHUANIA
EAST PRUSSIA
POZNANIA
SILESIA
GALICIA
LITTLE POLAND
MORAVIA
BOHEMIA
HUNGARY
CROATIA SLAVONIA
BOSNIA
SERBIA
BULGARIA
THESSALY
MACEDONIA
EPIRUS
PELOPONNESE
ANATOLIA
CAPPADOCIA
MESOPOTAMIA
Assur
Troy
Mycenae
Messara
Malfetta
SICILY
SARDINIA
ETRURIA
BAVARIA
SWITZERLAND
SAVOY
DAUPHINE
CEVENNES
AUVERGNE
GUIENNE
GASCONY
CATALONIA
BASQUE PROVINCES
CANTABRIA
ANDALUCIA
BALEARIC ISLES
CAUCASUS MOUNTAINS
CRIMEA
KHERSON
KHARKOV
CHERNIGOV
KIEV
STAVROPOL
TEREK
KOSTROMA
BATIAN
SARATOV
NORWAY
ÖSTERGOTLAND
Orkneys
Lodoga
Volga
Dniepr
Dniester
Danube
Rhine
Elbe
Weser
Ems
Meuse
Seine
Loire
Rhone
Garonne
Dordogne
Tiber
Po
Ebro
Guadalquivir
Tagus
Douro
Guadiana
Vistula
Oder
Thuringia
Saxony
Hanover
Westphalia
Brunswick
Mecklenburg
Schleswig
Holstein
Denmark
Jutland
Zealand
Bornholm
Gothland
Oesel
Dagö
Ösel
Tripolye
Hieromica
Cucuteni
Erösd
Vinca
Thessaly
Epirus
Malfetta
Vibrata R.
Sicily
Sardinia
Etruria
Savoy
Dauphine
Cevennes
Auvergne
Guienne
Gascony
Catalonia
Basque Provinces
Cantabria
Andalucia
Balearic Isles
Caucasus Mountains
Crimea
Kherson
Kharkov
Chernigov
Kiev
Stavropol
Terek
Kostroma
Batian
Saratov
Norway
Österg otland

MAP II. EUROPE IN THE SECOND HALF OF THE THIRD MILLENNIUM B.C. PERIOD II

Provinces

I The Minoan civilization E.M. III (chapter II).

II Cycladic civilization E.C. III (chapter III)

III Anatolian civilization, Troy II (chapter IV).

IV Thessalian culture, period III (chapter V)

IVa Early Helladic civilization (chapter V).

V Sicilian and South Italian neolithic cultures (chapter VI).

Vb Proto-Sardinian culture (chapter VII).

VI Almerian culture, later neolithic (chapter VIII).

VIIa, b, and c. Cave cultures (chapters VIII and XVII).

VIIIa, b, and c. Atlantic megalith culture, dolmens (chapters VIII, XVIII and XIX).

IX Area where thin-butted flint celts of West European type occur (chapter XVIII).

X Danubian I cultures, the boundaries are hatched (chapter XII).

Xa Danubian II culture (chapter XII).

XI Erösd, later stages (chapter XI).

XIa Cucuteni-Tripolye B (chapter XI).

XIb Thracian culture with graphited ware (chapter XI).

XII Ochre graves (chapter X).

XIII Nordic thin-butted celts and dolmens (chapter XIII).

XIV Nucleus of Alpine lacustrine culture (chapter XVI).

XV Bone and slate cultures allied to the Arctic (chapter XIV).

Megalithic areas stippled.

N.B.—The collared flasks from North-west Germany are omitted. The polygonal battle-axes from the Alps and Italy belong to period III. Scandinavian examples are omitted.

PERIOD II
+ Collared flasks
* Axe-adzes of type A and allied hammer-axes of copper
◇ Polygonal stone battle-axes
Volosovo
Ljungby
Aland Islands
Schwartzort
Jaklowice
Nalenczow
Zastow
Lutska
Rixdorf
Worms
Novo Cherkask
Jordola
Jenikoi
Ismir
Cernavoda
Kodja Derman
Tall Matchkul
Kul Euyuk
Yonkan
Kamenka
Ia
Ib
Ic
Id
Ie
IIa
IIb
IIc
III
IV
V
VI
VII
VIIa
VIIb
VIIc
VIII
VIIIa
VIIIb
VIIIc
IX
X
XI
XII
XIII
XIV
XV

MAP III. EUROPE ABOUT 2000 B.C. PERIOD III

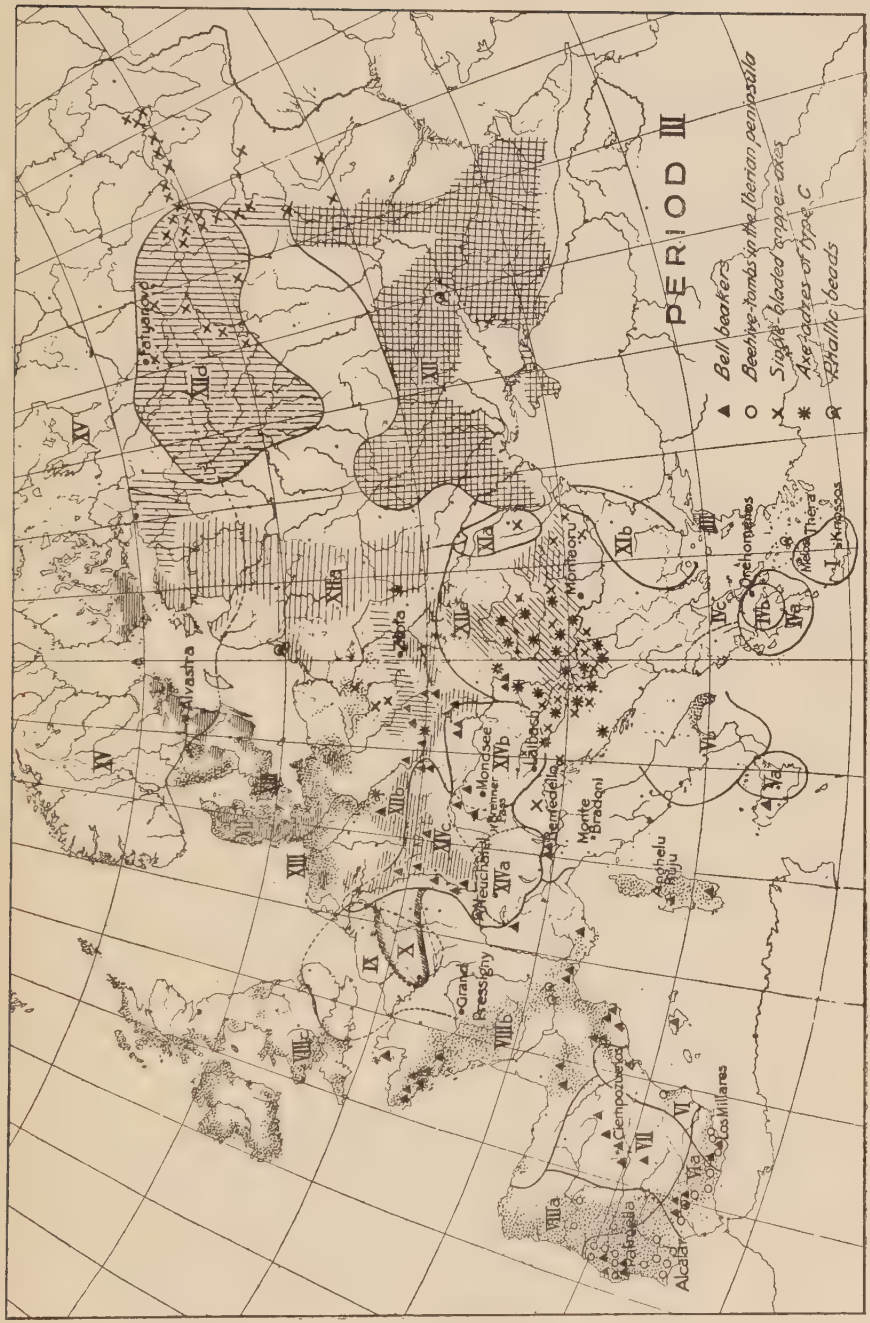
I Minoan civilization, M.M. I-II, with extensions to the islands.
III Anatolian civilization, Troy II iii.
IVa Middle Helladic civilization.
IVb Centres of Minyan culture.
IVc Thessalian culture, period IV.
Va Siculan I.
Vb Chalcolithic culture of South Italy.
VI Almerian culture, full chalcolithic.
VIa Orientalizing civilization of Los Millares-Palmella.
VII Bell beaker civilization.
VIIIa, b, and c Atlantic megalith culture—passage graves and early covered galleries.
IX West European flint province.
X Possible western extension of Danubian I culture.
XIa Last phases of Cucuteni B.
XIb Thracian culture with graphited ware.
XII Ochre graves.
XIIa Battle-axe culture of mixed types.
XIIb Thuringian barrows with corded ware.
XIIc Separate graves of Jutland.
XIId Fatyanovo battle-axe culture.
XIIe Copper battle-axe culture.
XIII Nordic megalith culture with thick-butted celts.
XIVa Swiss lake dwellings.
XIVb Altheim-Mondsee culture.
XIVc Michelsburg culture.
XV Arctic and allied cultures of hunters and fishers.
XVI North Italian copper culture.
Megalithic areas stippled.

Distributions :

The several battle-axe cultures are appropriately hatched in as much as they extend into the areas occupied by other peoples.

Horizontal shading denotes the Jutland-Thuringian and allied groups ; vertical the Fatyanovo and Silesian groups ; oblique the Hungarian copper age group ; and cross-hatched the ochre graves.

N.B.—Some phallic beads do not belong to this period.


PERIOD III
Bell beakers
Beehive tombs in the Iberian peninsula
Sicilian bladed copper axes
Axe-adzes of type C
Khalkis beads
Tolvaljord
Alvastra
Montoro
Jalbach
Monteleone
Meuchbach
Kremer
Pape
Grand Pressigny
Monte Bradoni
Angheli Ruju
Clemposada
Palmella
Alcalar
Los Millares
Orchomenos
Melos
Thera
I. Kreossos

MAP IV. EUROPE ABOUT 1600 B.C. THE EARLY BRONZE AGE

Provinces

I	The Minoan civilization and empire on the Mainland.
III	Troy V.
IV	Thessalian culture of period IV and non-Minoan cultures of West Greece.
V	Siculan II civilization.
VI	Bronze Age of Almeria—El Argar period.
VIIa	Pyrenaic culture.
VIIb	Possible survival of cave culture in Liguria.
VIII	Atlantic megalithic cultures—covered galleries and megalithic cists.
IX	British bronze age civilization.
IXa	Intrusive bronze age civilization of North Britanny and Normandy.
X	Aunjetitz culture.
Xb	Hungarian bronze age battle-axe culture.
XI	? Survival of Thracian culture.
XII	Central German bronze age civilization with burials under barrows.
XIIa	Battle axe cultures still semi-neolithic.
XIII	Scandinavian megalith culture—covered galleries.
XIIIa	Remnants of North Sea megalithic culture, covered galleries.
XIIIb	Seine-Oise-Marne culture—covered galleries and artificial grottoes.
XIVa	Swiss lake-dwellings—chalcolithic period.
XIVb	Bronze age based on the Altheim civilization.
XIVc	Rhenish bronze age culture—zoned beakers and Adlerburg phase.
XV	Arctic stone age culture—period of the axes with animals' heads.
XVI	Italian bronze age civilization.
	Megalithic areas stippled.

N.B.—The Cypriote daggers certainly and the double-axes and eastern amber finds possibly belong to an early period. Amber along the Central and Atlantic routes is not shown.

In South Russia the later ochre-graves belong to this period.

PERIOD IV
Halberds of German type with bronze shaft
Irish gold lunulæ
Symbolic double axes of copper
Cypriote daggers
Amber finds in the west and east
Galich
Oserma
Mycenæ
Aunjetitz
Straubing
Tschingen
Hainsberg
Cabura
Corihuela
El Agar

ABBREVIATIONS

Periodical Publications

AfA.	*Archiv für Anthropologie* (Brunswick) (references to volumes of new series).
Afas.	*Association francaise pour l'avancement des Sciences* (*Comptes rendus* of Congresses).
A.J.A.	*American Journal of Archeology.*
A.M.	*Mitteilungen des kaiserlich deutschen archäologischen Instituts, athenische Abteilung.*
Ant.J.	*Antiquaries' Journal* (London).
Ant. Tids.	*Antikvarisk tidskrift för Sverige* (Stockholm) (Swedish).
Arch.	*Archæologia* (London).
Arch. Camb.	*Archæologia Cambriensis.*
'Αρχ. Δελτ.	'Αρχαιολογικὸν Δελτίον (Athens).
Arch. Ert.	*Archæologiai Értésitő* (Buda-Pest) (Magyar; the later volumes have resumés in French or German).
Arch. J.	*Archæological Journal* (London).
AsA.	*Anzeiger für schweizerische Altertumskunde* (Zurich).
AsAg.	*Archives suisses d'Anthropologie générale* (Geneva).
AuhV.	*Altertümer unserer heidnischen Vorzeit* (Mainz).
Anuari	Institut d'estudis catalans (Barcellona) (Catalan).
B.A.	*Bulletin archéologique* (Paris).
B.C.H.	*Bulletin de correspondance hellénique.*
B.J.	*Bonner Jahrbücher* (Verein von Altertumsfreunden im Rheinlande, Bonn).
Bol. Acad. Hist.	*Boletin de r. Academia de la Historia* (Madrid).
B.P.	*Bullettino di paletnologia Italiana* (Parma).
B.R.-G.K.	*Bericht der römisch-germanischen Kommission* (Frankfurt a. M.).
B.S.A.	*Annual of the British School at Athens.*
B.S.A. Brus.	*Bulletin et Mêmoires de la société d'anthropologie de Bruxelles.*
B.S.A.P.	*Bulletin de la société d'Anthropologie de Paris.*
B.S.R.	*Papers of the British School at Rome.*
C.I.A.	*Congrès international d'anthropologie et d'archéologie préhistoriques, Comptes rendus.*

C.P.F.	Congrès préhistoriques français, *Comptes rendus.*
Dolgozatok	az Erdelyi Nemzeti Muzeum (Koloszvar—Cluj or Clausenburg) (Magyar with adequate French resumés).
Ἐφ. Ἀρχ.	Ἀρχαιολογικὴ Ἐφημερὶς (Athens).
FB. Schwab.	*Fundberichte aus Schwaben.*
F.M.	*Finskt Museum* (Helsingfors) (articles in Swedish or Finnish with German resumés).
Fv.	*Fornvännen*, meddelanden från K. Vitterhets, Historie, och Antikvitets Akademien (Stockholm) (Swedish with German resumés).
G.J.	*Geographical Journal* (London).
H.P.	*L'Homme préhistorique* (Paris).
Izv. I.A.K.	*Izvestia Imp. Arch. Kommissii* (St. Petersburg = Leningrad) (Russian).
Jb. d. Inst.	*Jahrbuch des k. deutschen archäologischen Instituts.*
J. Eg. A.	*Journal of Egyptian Archæology* (London).
JfA.	*Jahrbuch für Altertumskunde* (Vienna).
J.H.S.	*Journal of Hellenic Studies* (London).
J.R.A.I.	*Journal of the Royal Anthropological Institute* (London).
J.S.T.	*Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder* (Halle).
J.Z-K.	*Jahrbuch der k. k. Zentral-kommission für Erforschung usw* (Vienna).
L.A.A.A.	*Liverpool Annals of Archæology and Anthropology.*
L'Anthr.	*L'Anthropologie* (Paris).
M.A.	*Monumenti antichi pubblicati per cura dell' Accademia dei Lincei* (Rome).
M.A.G.W.	*Mitteilungen der anthropologischen Gesellschaft in Wien.*
Mannus.	*Mannus*, Organ der deutschen Gesellschaft für Vorgeschichte (Berlin and Leipzig).
Mat.	*Matériaux pour l'histoire primitive et naturelle de l'homme* (Paris).
Mat. A. A.	*Materialy antropologiczno-archeologiczne* (Cracow).
Man.	*Man*, published by the Royal Anthropological Institute, London.
MPK.	*Mitteileungen der prähistorischen Kommission der Akademie der Wissenschaften* (Vienna).
M.S.A N.	*Mémoires de la Société des Antiquaires du Nord* (Copenhagen).
M.Z.	*Mainzer Zeitschrift* (Mainz).
O.A.P.	*O Archeologo Português* (Lisbon).
Otchet	*Otchet Imp. Arch. Kommissii* (St. Petersburg = Leningrad) (Russian, but the older numbers gave French summaries).

Nord. Fort.	*Nordiske Fortidsminder* (Copenhagen) (Danish with good French resumés).
Not. Scav.	*Notizie degli Scavi di Antichità* (Rome).
P.A.	*Památky archeologické a místopisné* (Prague) (Czech : the latest numbers contain a French resumé).
Pravek	*Pravek, L'Age préhistorique* (Kojetin) (Czech only).
Proc. Ant.	*Proceedings of the Society of Antiquaries of London.*
Proc. P.E.A.	*Proceedings* of the Prehistoric Society of East Anglia (London).
P.S.A.S.	*Proceedings* of the Society of Antiquaries of Scotland (Edinburgh).
P.Z.	*Prähistorische Zeitschrift* (Berlin).
R.A.	*Révue archéologique* (Paris).
R.E.A.	*Révue mensuelle de l'école d'Anthropologie de Paris.*
R.E.G.	*Révue des Études greques* (Paris).
R. Ét. Anc.	*Révue des Études anciennes* (Bordeaux).
R-G. K.Bl.	*Römisch-germanische Korrespondenzblatt.*
Riv.	*Rivista di antropologia* (Rome).
R.P.	*Révue préhistorique* (Paris).
R.Q.S.	*Révue des questions scientifiques* (Brussels).
SMYA.	*Suomen Muinaismuistoyhdistyksen Aikakauskirja = Finska Fornminnesföreningens Tidskrift* (Helsingfors) (articles in German, French, Swedish, or Finnish).
S.V.	*Schlesiens Vorzeit in Bild und Schrift* (Breslau).
Swiat.	*Światowit* (Warsaw) (Polish).
Trudy	*Trudy arch. S'ezda*—Works of the Russian Archæological Congresses (Russian).
Vjesnik	*Vjesnik hrvatskoga arkeologičkoga družtva* (Agram-Zagreb) (Croatian).
WDZ.	*Westdeutsche Zeitschrift für Geschichte und Kunst* (Trier).
Wiad Arch.	*Wiadomości archeologiczne* (Warsaw) (Polish, with French resumés).
WiadNA.	*Wiadomości numizmatijczno-archeologiczne* (Cracow) (Polish).
W.M.B.H.	*Wissenschaftliche Mitteilungen aus Bosnien und Herzegowina* (Vienna).
W.P.Z.	*Wiener Prähistorische Zeitschrift.*
Ymer	*Ymer* (Svenska Sällskapet för Antropologi och Geografi) (Swedish).
ZfE.	*Zeitschrift für Ethnologie* (Berlin).

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ADDENDA

p. 7. *Tardenoisian types* have recently been recognized in Moravia by Prof. Kozłowski and their distribution in West Poland and South Germany is somewhat greater than that shown in Fig. 9.

p. 12. *The theory of a brachycephalic invasion* at the close of the old stone age, in so far as it rests on purely anthropometric data, has been given its quietus by the latest researches of Sir Arthur Keith. A palæolithic (Aurignacian) skull from Solutré in France was round-headed and even in the Piltdown skull a tendency in that direction is noticeable. Cf. Keith, *The Antiquity of Man* (1925), pp. 91 and 577.

p. 62. *A stone battle-axe* from Yortan is in the Fitzwilliam Museum at Cambridge. Hence the battle-axes from Troy may be safely assigned to the second city. Cf. *C.R. Acad. des Inscrips.*, 1901, p. 815, pl. I.

pp. 160ff. *The first graves* certainly belonging to the vase-painters of the black-earth have just been found at Russe in North Bulgaria. They contained contracted skeletons and one isolated skull in company with typical " Thracian " wares as in Fig. 165. Two skulls were brachycephalic, one Mediterranean; the fourth belonging to a tall individual, was mesatocephalic (76.9) (*Izv. Bulg. Arch. Instit.*, 1924, pp. 187f.). With these may be compared four skulls from Cucuteni (A or B ?)—one brachycephalic, 82.14, two mesatocephalic, 78.26 and 79.3, and one long 73.5, tall and short individuals being alike represented (*M.A.G.W.*, LIV, p. 41)—and a mesatocephalic skull from Thessaly I or II.

The hacked flint celts found with graphited " Thracian " pottery in Bulgaria (*Izv.*, l.c., p. 221, fig. 90) also deserve notice for North and East European affinities.

pp. 215 and 258. *The derivation of the violin-bow fibula* from the Nordic type now seems less probable since Eckholm shows that a very primitive variety of the violin-bow occurs already in an Aunjetitz grave at Gemeinlebarn, Lower Austria (*W.P.Z.*, XI, p. 33). Hence the Nordic and Italian safety pins are probably parallel developments of a Danubian prototype. Mr. Heurtley has also found a fibula of derivative type with flattened bow in company with very late Mycenean sherds on the Vardar.

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